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# The Disease Problem— Reflections of a Beekeeper

By R. O. B. Manley,  
England.

AMERICAN foulbrood has certain peculiarities which do not appear to be fully grasped by many beekeepers and the articles that have appeared in the American Bee Journal during recent months have rather emphasized this fact.

The suggestion that hereditary immunity may in time be achieved by careful selection is worth consideration although we had better start with the more moderate aspiration of hereditary resisting power.

There are a few very peculiar features connected with the causal agent of American foulbrood. *Bacillus* larvae cannot grow in a medium with a high sugar content and this is the reason why larvae infected do not die until after sealing, since not until then is the sugar content of the digestive system low enough to permit development. *Bacillus* larvae also would appear to be of rather feeble virulence since it has now been shown that in order to introduce the disease into a colony, the honey carrying the organism must contain enormous numbers of the spores—numbers, indeed, of the order of millions per cubic centimeter.

The explanation would seem to be that on account of the inhibition by high sugar content of development, the time available to it for the killing of the larva is very short, and as only

a killing dose of the virus can propagate the disease, light inoculations of larvae are ineffectual.

For in order to perpetuate the disease the larva must die and its carcass containing massed spores must remain in the cell so that by contact with honey placed therein later on and afterwards fed to other larvae, foulbrood may be spread through the colony. If the inoculation in the first place is not heavy enough to form within the short time available for development and increase of the bacilli, a killing dose, then the larva does not die but completes its development into an adult bee and the spores carried in the tissues of that bee, are, presumably, lost.

This is the fundamental basis of the shaking treatment, for were it not so, by no possibility could shaking be effectual as there must be at least some spores loose in every diseased colony which, if a slight tainting of honey were effective, would certainly contaminate honey stored after shaking. In fact there is little doubt that honey is so contaminated at such times, but the fact of such contamination being comparatively slight and not consisting of sufficiently numerous spores per cubic centimeter, on being fed to larvae is automatically eliminated.

There is another interesting point

about American foulbrood. All of us who have had experience of it know that, no matter how far advanced the disease may be in a colony, there are always some larvae that are not killed, though in these cases it is next door to impossible that any should have escaped feeding with very highly contaminated honey.

This seems to the present writer to be an important point in relation to the possibility of the evolution or development of hereditary immunity. It appears to indicate that some larvae are more resistant to the poison of the bacillus than others. Again there is no possible doubt that some colonies succumb to the disease far more quickly than others and this again seems to indicate that in those colonies there may be a larger proportion of resistant larvae.

Of course one cannot breed from resistant workers because they have no progeny; but we can and ought to breed from the queens of such colonies as show this indication of resistance. Also we ought, and if proper facilities can be arranged, to breed from drones which are the progeny of such queens.

Granted a completely isolated breeding station, where diseased colonies can be maintained without fear of injury to commercial beekeeping, it would not be impossible nor yet very difficult, technically, to attempt

this experiment. If such an isolated station were instituted, inspectors might be instructed to forward to it 100 or so colonies of those doomed to the flames which might be used as a basis. Only lightly infected colonies should be sent. The manager of the experimental station should then rigidly exclude all further imports of colonies from outside and watch those under his care closely. He should note all those which tend to grow rapidly worse and destroy them, but need not destroy the hives.

Among the 100 or 200 colonies or whatever number are isolated (a large number would be preferable since it would quickly be reduced by the destruction of unsuitable colonies as above) a few will almost certainly be found which seem to indicate a measure of resistance and in which the disease progresses very slowly or even remains static. These should be selected for further trial; all the others being destroyed. It seems to the present writer that if two or three of the apparently most resistant of these be systematically bred from and their most resistant descendants again bred from for some years, it is very probable that a very high degree of immunity might be hoped for. At all events, the experiment would be well worth a trial in view of the loss in the United States of such enormous quantities of material every year in the apparently quite ineffectual attempt to stamp out this terrible disease.

In Britain we are able to clean up the disease by shaking without much difficulty, provided care is taken in carrying the act out, and this may be and probably is, because our bees carry a certain degree of resistance. It **may possibly** be, for instance, that resistance has with our bees, developed to the point where a much larger primary inoculation is needed to constitute a killing dose and that the greater difficulty American beekeepers appear to experience in this method is due to the fact of their bees generally carrying a much lower degree of resistance and succumbing to a lighter inoculation.

If there is anything in these speculations, as there probably is, then the present policy of complete destruction as carried on at present in America, is certainly having the effect of increasing the general susceptibility of the honeybees there to this disease. Of course, failing hereditary immunity, destruction must be the policy of the beekeeper, for experimentation with a view to producing an immune race cannot be carried out except in isolation, and probably on a considerable scale.

No experimentation such as indicated above should on any account be attempted by private persons lest they should constitute a central point from which the disease might be spread far

and wide. Moreover any such experiment would be futile because without complete isolation no control of male parentage could be assured and male parentage is undoubtedly of quite equal importance to that of female.

The mechanism of heredity is steadily being investigated by biologists and many matters are becoming

less obscure, though much remains to be learned; therefore we would emphasize the necessity of any attempt to develop hereditary immunity should be in isolation and be conducted by competent persons for amateur attempts under ordinary conditions would almost certainly make matters worse instead of better.

## National Convention Ready?—Go!

**H**ERE'S the complete program of the big Southern Conference and National Convention at Valdosta, December 17, 18, 19 and 20. Are you ready? Then go!

Monday, December 17, 8:30—Welcome and responsive talks by Mayor J. D. Ashley, Valdosta; W. E. Harrell, President Southern Beekeeping Conference; J. W. Newton, President American Honey Producers' League; R. H. Kelty, President American Honey Institute. This is to be followed by a business meeting of the Southern Beekeeping Conference at 11:30.

Luncheon at 12:30. At 2:30 P. M. continuing until 5 o'clock the following speakers and subjects: "Producing Package Bees and Queens," (Lantern) W. E. Harrell, Hayneville, Alabama; "Moving Bees By Express," G. Sadler, Atlanta, Georgia; "Transporting Package Bees By Truck," R. M. Pugh, Regina, Saskatchewan; "Receiving Package Bees," L. T. Floyd, Winnipeg, Manitoba; "Supersedure," H. C. Short, Fitzpatrick, Alabama;

"Expansion of Local Honey Market," T. W. Burleson, Waxahachie, Texas; "Investigation of Honey Clarification," Dr. R. E. Lothrop, Washington, D. C.; "Honey Markets," M. G. Dandant, Hamilton, Illinois; "Cross Pollination," G. H. Cale, Hamilton, Illinois; "Florida Beekeeping," J. W. Barney, Bradenton, Florida.

On Tuesday, December 18, at 8:30, registration and visiting exhibits. At 9:00 business meeting of American Honey Producers' League. At 10:30 business meeting of American Honey Institute. 12:30 luncheon. At 2:00 the following addresses: "New Standards in Food," Mary I. Barber, Kellogg Company, Battle Creek, Michigan; "National Honey Week and Our Emphasis Program," Katherine Lanier, Specialist in Food Preservation and Utilization, State of Georgia; "Honey in Home Demonstration Agents' Program," Lorene Collier, State Home Demonstration Agent, State of Georgia; "Florida's Honey Program," Isabella S. Thursby, Food



Hotel Daniel Ashley, Headquarters for the Convention.

Specialist, Tallahassee, Florida; demonstration by Mrs. Malitta F. Jensen, Secretary American Honey Institute.

This program will be followed by a report of the judges of the first national honey contest. Judging will be done by Lorene Collier, Mary I. Barber, Mrs. Jensen, Mr. Harrell, Mr. Newton and Mr. Kelty.

At 8:00 P. M. there will be a general get-together and barbecue with Brunswick stew or fish fry, a regular social gathering with a chorus of a hundred negro voices. Music of all kinds and specialty skits.

On Wednesday, December 19, at 8:30 A. M., visiting of exhibits will be continued, followed at 9:00 by a final business meeting of American Honey Producers' League and a final meeting of American Honey Institute at 10:30 with a special speaker at luncheon at 12:00 noon.

At 2:00 P. M. the following addresses: "The New Era in Beekeeping," E. R. Root," President A. I. Root Company, Medina, Ohio; "Dysentery—Cause and Control," H. F. Wilson, Madison, Wisconsin; "Disease Eradication," C. A. Reese, Columbus, Ohio. Subjects to be supplied by the following: Kenneth Hawkins, Watertown, Wisconsin; Dr. M. C. Tanquary, St. Paul, Minnesota; Mr. Anderson, Baton Rouge, Louisiana; Dr. Whitcomb, Baton Rouge, Louisiana.

At 8:00 a banquet at Valdes Hotel with Governor Talmadge as honor guest.

On Thursday, the last day of the Conference, at 8:30 in the morning there will be a final business meeting of the Southern Conference, followed by one of the Bee Shippers' Federation and the following discussions: "Buyers' Needs," Professor R. H. Kelty, Lansing, Michigan; "Shippers' Preparation," E. G. LeSturgeon, San Antonio, Texas; "The Value of Trade Agreements," Jas. I. Hambleton, Washington, D. C. Subject to be supplied by Professor McDrew, Washington, D. C.

There will be a luncheon at 12:30, Georgia Beekeepers' Association meeting at 2:00, Apiary Inspectors of America at 3:00 and adjournment of Conference at 4:00.

A. V. Dowling, of 118 W. Hill Ave., Valdosta, Georgia, is in charge of all local arrangements for displays and anybody wishing exhibition room at the Southern Conference, get in touch with Mr. Dowling. Everyone interested in exhibits should let it be known early the space they require.

Judging by the amount of correspondence being handled by the Valdosta tourist camps, hotels, Chamber of Commerce, etc., there will be one of the largest conventions ever held. Georgia beekeepers are enthusiastic. The meeting will probably be above the fondest expectations. If you do not want to miss the greatest event ever held in beekeeping, you had better be there.



Pines Camp Court—Forty cottages and conveniences.



Brookwood Park, Valdosta, near Convention Hall.

Citizens of the convention city are alive to the nature of the meeting. Hotel men and business men have expressed their desire to eliminate overcharges and all visitors will be treated fairly. The barbecue and Brunswick stew which is to be given in connection with the convention with the chorus of a hundred negro voices and other specialties will be at a total cost of 50 cents per ticket. The Daniel Ashley Hotel, the finest in southern Georgia, will give a banquet on Wednesday night including specialty numbers and entertainment for a total sum of 75 cents per plate.

The Pines Tourist Camp which is

listed as one of the finest in America can accommodate 250 guests at \$1.00 for two or 50 cents each. The rates of hotels and rooming houses will be from 50 cents up. Luncheon will be served at the convention hall for 35 cents including dessert and drink. This assures the beekeepers that they can come to Valdosta and stay four days for about the same price they would pay for a two day session in a larger city.

It is certainly hoped that convention city will be flooded with visitors for the entire time. Those who come are assured that they will have the  
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# EDITORIAL

AMERICAN  
BEE JOURNAL



## Greetings

Another year is drawing to a close. It has been a very unusual season, for over large areas we have had unprecedented heat and drought which caused general disaster to crops. Many of our readers have harvested but little honey and in some cases the bees have died. It is useless to dwell upon the unpleasant features but far better to look for the happy events of the year. Abundant rains have recently fallen over much of the drought stricken region and we have reason to hope for better things next year.

We trust that in spite of the adversities through which we have passed that all our readers will enjoy a happy holiday season and that it will in fact be "A Merry Christmas" in the home of every reader of this magazine. If we take stock of our surroundings we find that we still have very much that is good and the promise of more to come.

After all, the best things in life are independent of business cycles and weather vagaries. The love of family, the regard of friends, the comfort of home are priceless. The green of the grass, the glow of the evening sunset, the lilting song of the meadow lark, the beauty of the flowers are unaffected by closed banks and business holidays.

Let us thank God for what is left and instead of bothering about the things that are gone let us take stock of all that is still within our reach. Love and hope, faith and good will will open the door of opportunity again. Rain will fall, flowers will bloom, the bees will soon be humming once more among the flowers. With this promise in mind let us have a very merry Christmas and a happy New Year.

## Our Index

Readers who preserve the copies of the American Bee Journal should make note of the fact that the index is published separately and not stitched in the December issue as has formerly been our custom. To secure a copy it is only necessary to drop us a card giving the address to which it is to be sent. There will be no charge for the index. Be sure to get the index to complete your files of the current year. Previous years have been printed as a part of the last issue of the volume.

## Trend of Prices

There is much discussion just now as to the price which the beekeeper can expect for his honey. As a result of the low prices of recent years, honey has come into use in many places which were formerly supplied by some other sweet. The question arises as to whether this market can be held in the face of rising prices for honey. The short crop of the season just closed has resulted in some improvement in the price but the indications are that prices cannot be sustained at a point which is out of line with the cost of competing sweets.

Honey which was formerly used universally as a table sweet has very largely been replaced by corn syrup. A good syrup is now selling at retail at about thirty cents for a five pound pail. Honey because of its special flavor continues to sell at a price substantially higher than the corn syrup but there is a limit beyond which the consumer will not go.

Likewise the baker who uses honey freely because it is cheap may go back to the use of something else if the price goes too high. Quite naturally the old law of supply and demand will settle the question. As long as the demand exceeds the supply the price will continue to

rise. When the price reaches the point where the consumer substitutes something else the rise will cease.

Because of this fact, an important factor in setting the price of honey will be the cost of other sweets which can be made to serve the same purpose. The tendency toward higher prices for all commodities is helpful and we are hoping to see honey established on a relatively favorable basis. The new outlets offer promise of a permanently improved condition for the beekeeper.

## More Trouble From Poison

The South African Bee Journal reports trouble for the beekeeper in neighborhoods where flower growers use arsenate of lead and molasses to spray their gardens. It appears that the molasses attracts the bees at a time when little nectar is available and they carry the poison into the brood nest. Whole apiaries are thus destroyed since queen and brood are killed along with the field force.

Reports of damage from poison are of increasing frequency and from constantly widening areas until it appears that nearly the whole world is included. The use of poison for control of pests is certainly being overdone and it is high time that some check be put on its careless application. Not only are honeybees being generally destroyed but much useful wild life and occasionally domestic animals are killed.

## More Bees

We have recently enjoyed a visit from a western beekeeper who with his partners has produced about six carloads of honey in the season just closed. In spite of the severe drought which greatly curtailed bee pasture and made it necessary to move some of the bees to distant pastures he had a prosperous season.

In conversation he related how he had met the changing conditions with falling prices of recent years by increasing the size of the apiaries. With the severe competition of other sweets it is no longer possible to get the price for honey which enables the beekeeper to live from the output of one or two hundred colonies of bees. There are 1400 colonies in our visitor's outfit. He is representative of many in the alfalfa and sweet clover districts of the West. No longer is there much novelty in a big outfit with a thousand or more hives.

## Disease Resistance Again

In a letter discussing the subject of disease resistance, Mr. Charles Mraz, of Vermont, states that in his opinion it offers promise more as a preventive than as a cure of disease. This is a very important point and one that should not be overlooked in any discussion of the subject. It is doubtful whether at any early date there can be any complete immunity found. If, however, we can find a strain of bees resistant to the point that only half of the present number of colonies contract disease, it will be a tremendous saving to the industry.

That there are such bees is not to be doubted and the problem is to find them and use them as breeding stock in commercial queen yards so that they will become generally distributed.

That the degree of resistance can be increased by proper breeding there is every reason to believe from the success of similar efforts in other fields. When both parents of young queens are of resistant stock an increasing number will inherit this character until it becomes fixed. There can be but little question that immunity can eventually be established by selective breeding and it is certainly a problem worthy of the attention of our most skillful research men.



## Color of Honey

The question frequently arises as to what makes the difference in the color of honey from different localities. Alfalfa is the example most frequently mentioned because of the marked difference in the color from different areas. Other plants offer similar examples, however. Heartsease honey secured by the writer has been uniformly dark amber in color yet samples have come to this office which were very light. Our honey came from plants on rich loam soils while the light colored heartsease honey was produced in a sandy region. The indications are that the soil is largely responsible for this difference in the color of honey from the same plant in different localities, although that will not account for it all. Some correspondents insist that they sometimes get honey of distinctly different shades of color early and late in the flow from the same plant in the same apiary.

## Winter Protection

From the first volume of this magazine much space has been given to a discussion of the problems to be met in bringing the bees safely through the winter months. With all this extended discussion we have not learned so much more about the subject than the pioneers knew. It was early recognized that a sheltered situation was of first importance and even today with all our packing cases and special attention we find it very difficult to winter successfully in exposed situations. A strong colony of bees with plenty of good stores will stand very severe cold if the hive be placed where there is ample shelter from the wind.

Where we find good results in wintering in northern localities we are pretty sure to find the bees sheltered from the wind. One of the most important changes in the writer's early experience was the moving of the apiary from an exposed situation to a point behind the grove. The difference in condition of the bees in spring was surprisingly improved.

In selecting a permanent site for an apiary the matter of the wind protection thus becomes of primary importance, second only to the access to suitable pasture.

## How Many Bees?

There has been much speculation as to the number of colonies of bees which could profitably be supported in this country. Such contemplation is more or less idle since it is impossible to make any accurate estimate. Quite naturally the number would vary greatly from year to year depending upon the season and the amount of forage available.

The statement has been made that Germany has many more colonies of bees to the square mile than we have in this country, yet Germany does not produce enough honey to meet her requirements. Apparently other sweets have not taken the place of honey in that country to the extent that they have in America.

There can be no question but that many times the number of colonies now kept, could be supported by the flowers which annually furnish nectar. The important question, however, is not how many colonies could be kept, but how many can be supported with profit to the beekeeper. It is certainly not to the advantage of the industry to produce more honey than the public will consume. There are some among the packers who contend that if the beekeepers would give all their attention to the production of honey and leave its sale to the men who specialize in that direction the present demand could be greatly increased. After all it is the market price of honey which is likely to determine the number of bees to be kept in this country.

## Honey vs. Farming

Some years ago a farmer spoke at Indiana Farmer's Institutes on the "Importance of Apiculture." His talk was of special interest in that he gave comparative figures

on the returns from honey production with general farming. He reported that his own apiary of 110 colonies had brought a larger net return than his 200 acre farm worth \$12,000. It is probable that during the past few years similar comparisons would be quite general.

## Milk and Honey

Readers of the Bible will at once recall the numerous references to milk and honey in the Old Testament. The two are often spoken of together as though they might sustain some relation to each other. In this connection there may be something of interest in the comments of L. L. Langstroth in this magazine in 1892 when he contended that milk served a useful purpose when eaten with honey. From his extensive article the following paragraph is quoted:

"Extending my inquiries, I became convinced that milk is an antidote for bee poison; for when I was not working with the bees, I cared little or nothing for it; and it was only when my system was fairly saturated with bee poison, that I had an almost insatiable craving for milk. I then began to study what eminent writers had to say about any connection between milk and honey, and found that, from the time of Hippocrates, who was born 460 years before the birth of Christ, down to modern times, successive testimony could be found as to the value of milk to prevent any injurious effects from eating honey."

So many amazing discoveries are being made in the field of human nutrition that it is no longer safe to scoff at such suggestions. After all, it is possible that there may be something to it.

## Beekeepers Go South

The Valdosta meetings in December will attract an unusual number of beekeepers to the South for the winter months. Many will remain until time to begin work with the bees next spring. All reports indicate an attendance far above the average for conventions of beekeepers held in northern cities in recent years. It is not yet too late to make plans to attend. The dates are December 17, 18 and 19 and the place Valdosta, Georgia, which is but a short distance from the Florida state line. The program and information regarding hotel accommodations appear elsewhere in this issue.

## Honey from Morning-glory

For some reason of late we seldom hear of the morning-glory as a source of nectar. In years gone by there were frequent references to honey from this source. In back numbers of this magazine there are reports of yields of as high as 80 pounds of morning-glory honey which was said to be "clear as spring water" and with the finest possible flavor. Such reports came especially from Texas and the Southeast.

## What Kind of Articles Do You Want?

In last month's issue there appeared a short note asking the readers of this magazine for suggestions as to the kind of articles they would like to read. It so happened that a contemporary bee magazine made similar inquiry at the same time. Some very interesting letters have come to this office as a result.

In this connection it is of interest to recall that in response to a similar inquiry many years ago, James Heddon, then a very prominent beekeeper, wrote:

"Honest reports and opinions of honey producers who make beekeeping pay."

In Heddon's day writing for the bee papers attracted the interest of a far greater number than is the case today, but it was then as now difficult to get the busy honey producer to take time to tell of the successes and failures of his work in the apiary.

# More Answers to Questions on Disease

By Charles Mraz,  
Vermont.

**T**URN to the November number, page 488, where E. S. Miller answers questions about American foulbrood. Judging by the answers, Mr. Miller speaks from experience. Having had considerable experience with it myself, and with all its treatments, I'd like to add to some of the questions.

No. 1—"Can a queen from a diseased colony be used for requeening?" Mr. Miller answers that such a queen will not transmit disease. That is true. The queen herself will not transmit disease but the fact that her brood has once been diseased proves that her brood is susceptible to it and the colony is most likely to become diseased again if it gets in contact with the spores in any way.

It must be realized that bees differ greatly in susceptibility to American foulbrood. Some colonies will come down quickly with the disease with the slightest contamination. Some colonies get it only after having heavy doses of infected material. Others vary between these two extremes. The important joint in cleaning up American foulbrood is to get rid of these susceptible queens and any queen whose brood once shows disease should be killed. It is simply the law of "Survival of the Fittest" in action.

No. 3—"Does it pay to disinfect combs?" It doesn't pay to disinfect combs whether you have just a few or a large number of them. **Trying to disinfect combs is simply messing up a mess.**

No. 5—"If I find a few cells of American foulbrood may I dig them out and expect the colony to recover?" The answer is as Mr. Miller says "NO." (See question 1.)

No. 10—Disappearance of foulbrood. On this point I disagree with Mr. Miller. I do not believe he gets the idea of resistance. He says "If American foulbrood sometimes apparently disappears, don't think you can build up a strain of bees that is immune."

It sometimes happens that a colony will get American foulbrood and then it will disappear for a while but such colonies are not resistant. Real resistant strains of bees should never get the disease in the first place under ordinary conditions. Anyone who tries

to build up a resistant strain of bees with the present "American" bee has a long, tough job ahead of him. The place to look for such bees is in Europe or Asia where they have developed resistance to diseases to a great extent long before civilization existed.

The first bees imported to this country were undoubtedly resistant but with the coming of the movable frame hive which made possible unlimited expansion of colonies, and with modern queen rearing with its inbreeding and line breeding for golden and gentle bees, that resistance has been lost. European foulbrood and American foulbrood did not become a menace to beekeeping until after the movable frame hive and modern queen rearing.

The movable frame and queen rearing are, of course, essential to commercial beekeeping, but they must be used intelligently, especially queen breeding. Nature under her system does not miss a trick but we blundering humans are quite apt to be ignorant of her specifications. If resistance has been eliminated by one-sided breeding, it can be brought back by balanced breeding. We simply must retrace our steps and observe Nature's laws. Sooner or later we find out she is always right.

Mr. Miller then goes on to say "It will be far safer to leave such experiments to scientists who are properly equipped for the work. It is extremely doubtful if even they will succeed."

If I had waited, Mr. Miller, for scientists to succeed in this work, I would have been cleaned out of the bee business now. Credit must be given to scientists for what they are doing since they are naturally restricted by funds and other things from doing all they would like to do but if you will look back in beekeeping history and see who made the greatest advances in the past 100 years, you will not note any scientists among them; Hrushka, Dzierzon, Langstroth, Quinby, A. I. Root, Dant, C. C. Miller, are almost all "just beekeepers."

As in the past, if we will overcome the obstacles in our way, beekeepers must overcome them themselves. Necessity is the mother of invention.

## Miss Davison's Recipes

In publishing the article last month "Honey Cookery" by Helen Davison, of the University of California, we gave four recipes and promised to continue with them from month to month until they were finished. They will be given under the title "Miss Davison's Recipes." Here are several more of them:

### Honey Divinity

2½ cups sugar  
½ cup honey  
½ cup water  
2 egg whites  
¾ cup nut meats

Blend honey, sugar, and water. Cook to 256° F. Beat the egg whites until stiff then pour the hot syrup in a thin stream over the egg whites, beating constantly. Continue beating until it loses its gloss. Pour into a buttered pan and mark into squares.

### Honey Spice Cake

½ cup butter  
1 cup honey  
1 cup hot water  
2 eggs  
1 cup brown sugar  
2 cups flour  
¼ tsp. salt  
1 tsp. cinnamon  
½ tsp. cloves  
2 tsp. soda  
¼ tsp. vanilla

Blend well the butter, honey and hot water. Add egg yolks and sugar and beat well. Sift dry ingredients 3 times and add gradually to the first mixture, beating after each addition. Add vanilla, then fold in stiffly beaten whites of eggs. Pour in buttered shallow pan and bake 30 to 40 minutes in a moderate oven (350° F.). Serves 12 generously.

### Honey Cream Cake

2¼ cups flour  
¼ tsp. salt  
½ cup sugar  
½ tsp. soda  
3 egg whites, beaten  
2 tsp. baking powder  
1/3 cup butter  
1 cup honey  
1 cup milk

Cream butter thoroughly, add sugar gradually and cream together

until light and fluffy. Add honey and blend. Sift dry ingredients 3 times, add to first mixture alternately with milk a small amount at a time. Beat after each addition until smooth. Fold in egg whites. Bake in two well buttered nine-inch layer pans in moderate oven (350-375° F.) for 25 to 30 minutes. When cool serve in wedges with Honey Cream Sauce. Serves ten.

#### Honey Cream Sauce

1 cup honey  
1 cup cream

Cook honey till it forms a short thread from the spoon (235° F.). Chill thoroughly. Whip cream till stiff. Gradually fold honey into whipped cream.

## Utah Crop Less

The honey crop for Utah this year was 25 to 30 per cent less than 1933 with quality good, the honey light in color but a bit darker than 1933 due to the drought. Glen Perrins, Utah.

## "The Glass Packer" Sweetens Its Pages

Have you seen the November number of "Glass Packer"? This is a beautiful magazine devoted to the packing of foods and other products in glass. Published monthly at 230 Broadway, New York.

In the November number, honey gets a real send off. Hazel-Atlas Glass Company, Wheeling, West Virginia, have two pages advertising a full line of honey jars including their well known beehive jar, a modernistic design in another pattern and also the tall white-sealed round glass with which beekeepers are familiar.

The Glass Container Association has a page ad on honey containers and has a note reading: "This Association urges whole-hearted cooperation by the food industry with the efforts of the Department of Agriculture popularizing this finest food (honey) to the end that more honey be sold and more glass containers be used. With a new bright clear color and a delicate flavor, honey in glass is on the way to a new popularity with the consuming public. All of this is the outcome of an improved method of preparing strained honey developed by the Department of Agriculture described in detail elsewhere in this publication.

"However, this new popularity we speak of won't come by itself. That happy result must be exhilarated and made certain by aggressive promotion of the improved product by honey packers, food wholesalers and retailers. Consumers need but to be made acquainted with the new honey to increase their use of it and the frequency of purchase."

# Veteran Illinois Bee Man Dies



J. A. STONE

**JAMES A. STONE**, 92 year old Civil War veteran, died in early November at the home of his son near Bradfordton, Illinois.

Mr. Stone was one of the two survivors of the charter members of the Illinois Beekeepers' Association formed in 1891 and had been its secretary for some twenty-nine years before increasing age forced his retirement.

He was a pioneer as well as a beekeeper, his father having located in the Springfield neighborhood in 1820 and Mr. Stone having been born and raised in the same section. He was a Civil War veteran, one of the early volunteers.

An extremely methodical man, Mr. Stone had maintained a complete diary of his life up to his very last days. He was 92 years of age at the time of his death.

Among beekeepers in Illinois, Mr. Stone is probably as well or better

known than anyone else, having been secretary for such a long period and also having been a prominent exhibitor of honey and honey products at the Illinois State Fair for a great many years, always being represented in the blue ribbon class.

He was a familiar figure at the state meetings every year, even until 1933 and his family stated he had intended to attend the 1934 meeting when his death occurred just a few days previous.

Mr. Stone was one of those genial personalities whom one could not help love. He had always been a beekeeper and was one of the foremost advocates of sweet clover which he later learned the value of through the planting of more extensive acreages in and around his home yards. In his later years, he was extremely fond of flowers and spent most of his time in flower and garden work.

R. E. Lothrop and H. S. Paine of the Carbohydrate Division of the Bureau of Chemistry and Soils, United States Department of Agriculture have an article in this same issue "A New Method of Processing Honey, Brings Striking Clarity and Brilliance. Filtration treatment makes this attractive glass packed product even more beautiful and tempting." (In this issue of the Journal, page 542, you will find the same article.)

There is also a leader on a honey advertising campaign in New York,

sponsored by the John Paton Company, packers of "Golden Blossom Honey," a notice about Honey Week; an advertisement on page 708 of Owens-Illinois glass containers showing clover honey in a neatly designed modernistic jar. There is also a miscellaneous report of the serious time with drouth and food shortage among bees in California. Altogether a real honey issue of this magazine. We certainly have one more friend in the "Glass Packer."



# The Importance of Young Queens

By N. I. Lyle, Iowa.

From Iowa State Apiarist's Report, 1933.

**B**EEKEEPING of the present requires that business tactics be applied to all branches of endeavor. The beekeeper in his activity of practical honey production cuts cost to the bone in order to make a living. In so doing he must realize that wise investment in good queens repays many times. In the Lyle apiaries we have increased our queen allowance with considerable resulting profit on our investment.

The young queen starts her work with vigor and maintains egg laying at a high rate during the entire season. She is not deterred by light or non-existent honeyflows, but the continual urge is to lay eggs and more eggs. In the spring she starts off with a rush long before the workers are able to bring in nectar. If the beekeeper leaves plenty of honey in the fall for spring brood-rearing an enormous force of bees will be built up in readiness for the main honeyflow. This force of young workers may be likened to an army of race horses straining at the barrier. When the main flow comes they pile in the honey, several pounds per day as long as the honeyflow lasts.

If during this time the queen fails work is slackened and the workers because of loss of balance in the relationship between ages seem to lose interest. They leave the supers and crowd the brood nest with bees of honey-gathering age as well as young bees of nurse age. Honey and pollen are jammed into the brood nest. The bees loaf and soon swarm.

At the first indication of decreased egg laying the beekeeper should replace the failing queen with a new one. This is best done by the nucleus method and can usually be successfully accomplished in this manner if plenty of well stocked nukes are kept on hand at all times. The nuke with its force of very young bees when added to the colony restores the balance of workers as to age and honey production increases to the equal of any strong colony. This restoring of balance by the addition of young (baby) bees coupled with a vigorous queen practically eliminates all swarming fever.

With nuclei always on hand there is no waiting for queens to come, they are instantly available when needed. If a standing order is placed with a reliable queen breeder for a certain number of queens each week

the nukes can at all times be kept well stocked. When nukes are all filled and queens keep coming colonies must be closely examined for failing queens. You can easily see the result of forced activity in introduction reflected in the increased honey crop.

In our apiaries we produce mostly chunk honey and I am proud to say a high quality article. I observed we did not have as much pollen stored in the surplus honey as others reported. At first we thought the locality slightly different with not as much pollen available. Upon reflection we were convinced this could not be the case as corn is grown in northwest Iowa as widely as any place in the world. This past summer I noticed colonies containing failing queens apparently gathering more pollen than they could use. They seemed to gather so much that they were forced to carry it into the supers to get rid of it. Actually the bees gather no more but use less in feeding the larvae. Each larvae gets a full ration but there are less to feed. You older beekeepers with more experience may have known this but it was new to me. We therefore concluded for high quality comb honey young queens are absolutely necessary.

As previously stated queens should be purchased from a breeder known to be reliable. Inform him of your exact needs and wishes and he will do his utmost to satisfy you. If the breeder does not furnish good queens it is time to change to one who does. Be certain he rears his queens himself and is not just a high advertising dealer who buys very cheap queens and sells at a high price. Queens reared by short cut methods on sugar syrup and mated in tiny "baby" nukes are usually short lived and quickly superseded. Such queens are reared cheap, sold cheap and are very expensive.

Be hard hearted — kill a failing queen at the first indication of decreased vitality. Introduce by nuclei method without shock and loss of time. Then watch the production average per colony jump.

## British Columbia Figures

British Columbia honey production this year is expected to exceed 1,512,900 pounds with 15,000 pounds of beeswax according to Hon. K. C.

MacDonald. This is a gain of 50 per cent above 1932 and 25 per cent above 1933. The value is placed between \$225,000 and \$250,000. Production last year was 1,240,880 pounds and in the year previous 1,007,200 pounds. Average prices gained a cent per pound during this year.

The bulk of the yield was from lower mainland areas, from clover along the Fraser River. Much excellent honey was also produced on Vancouver Island.

Higher per colony yields are reported. In Okanagan and Thompson Valleys the yield was 101 pounds per colony, compared to 77 pounds average last year. Increase per colony was also noted in the Kootenays, the Lower Fraser Valley and the Central Interior.

Provincial government reports indicate nearly all of the crop was of high quality.

F. H. Fullerton,  
British Columbia.

## Questions About Black Locust

Where and of whom can the seeds of black locust be obtained? When and how should seeds be planted? What would be the cost of seeds sufficient to plant one acre where it could later be thinned out by transplanting to other areas? Does black locust withstand transplanting successfully?

Are any small beekeepers getting loans from the P. C. C. funds? Certain requests for \$150 have been refused because they were not large enough to satisfy those in power. Looks funny, doesn't it?

J. Skovbo wants beekeepers to quit using the nasty words American foul-brood yet he suggests the use of Nymph disease. Now it seems that the word "disease" is the nasty part of it. Let's simply use A. F. B. and E. F. B.; nothing more.

J. H. Sturdevant,  
Nebraska.

## Recipes from Illinois State Fair

### Honey Devils Food Cake

- ½ cup butter
- ¾ cup strained honey
- ½ cup sugar
- 3 eggs, separated
- 1 tsp. vanilla
- ½ cup walnut meats (chopped)
- ¾ cup Kellogg's Kaffee (cold)
- 1 ¾ cup flour
- ½ tsp. soda
- ½ tsp. salt
- ½ tsp. cinnamon
- ½ cup cocoa

Cream butter, add honey, sugar and egg yolks. Beat until mixture is light. Stir in nutmeats and vanilla. Sift dry ingredients together and beat egg whites. To the creamed mixture, add the dry ingredients alternately with coffee, stirring until batter is smooth. Fold in egg whites and pour into buttered pans. Bake at 375° F. for 20 minutes, then down to 350° F. for 15 minutes.

#### Yellow Honey Cake

- 1 ¼ cups sugar
- ¾ cup honey
- ½ cup shortening
- 1 cup milk
- 3 whole eggs
- 3 cups flour
- 4 tsp. baking powder

Cream shortening, sugar and honey. Add milk and eggs well beaten. Then flour in which baking powder has been sifted. Beat, beat, beat. Pour in well greased pans and bake in moderate oven.

#### Honey White Cake

½ cup butter creamed with 1 ¼ cups sugar, and ½ cup honey. 1 cup water, 3 cups sifted flour, 3 tsp. baking powder, ½ tsp. soda. Lastly fold in 4 large egg whites, well beaten.

#### Ginger Bread

- 1 ½ cups flour
- ¼ cup brown sugar
- ¾ cup honey
- ½ tsp. ginger
- ½ tsp. cloves
- ½ cup fat
- ½ cup sour milk
- 1 tsp. baking powder
- ½ tsp. soda
- ½ tsp. cinnamon
- ½ tsp. salt
- 1 egg

Cream sugar and honey. Add well beaten egg and milk alternately with sifted dry ingredients. Bake in moderate oven.

#### Honey Crisp Wafers

- 1 ¼ cups flour
- 1 tsp. baking powder
- ¼ cup butter
- ¼ cup honey
- ¼ cup sugar
- 1 egg, well beaten
- ½ tsp. soda

Mix and beat extra well. Roll thin and bake in quick oven.

#### Oatmeal Cookies

- ½ cup sugar
- ½ cup dark honey
- 1 cup butter
- 2 cups oatmeal
- 1 scant tsp. soda in 4 tbsp. sour milk
- 2 eggs (well beaten)
- 2 cups flour (sifted)
- Pinch of salt
- 1 tsp. vanilla
- 1 cup ground raisins
- 1 tsp. cinnamon

Mix well and bake in greased pans dropped by spoonful.

Mrs. Rutha King.

## Pollen Important for Winter

By C. L. Farrar,  
Wyoming.

WE heartily concur with your emphasis on pollen in meeting the wintering problems. Our preliminary results as published in the May issue of *Gleanings* were substantiated by last season's results. During the first year the temperatures were sub-normal for this region whereas last year they were abnormally high.

In your Editorial for the March and October issues of the *American Bee Journal* and in your Postscript for July, you emphasize that excess pollen is stored above the brood nest and is likely to be removed with the supers. I am interested in this observation since we have not found that to be the case. The normal tendency is to envelop the brood nest completely with a band of pollen when it is collected in excess of immediate needs. Thus central combs have more or less narrow bands between the brood area and the honey and combs to the side of the brood nest, the entire surface filled. When there is an excess of this they store pollen below the brood in preference to placing it above. The reverse is true of honey and while one can force a colony to store honey below the brood nest they store it more readily above. While they may store pollen above it is our observation that they store it more willingly below.

We recently made a survey of the pollen reserves in 226 colonies representing a cross section of two large apiaries totaling 2500 colonies in Colorado as a supplement to our experimental series we are running here at the laboratory. We could find very little pollen in combs above the active brood nest. One group was run with excluders above the first set of combs after the main flow began, the other with excluders above the second hive body. In either case the majority of pollen was found below and we checked very carefully for pollen covered with honey.

These men thought they had an abundance of pollen but with the exception of one yard the colonies average probably well below what the colonies could use before new pollen is available. The colony averages for six yards was 89, 118, 171, (sq. in.) and 168, 240, 334, respectively for the two apiaries. In every yard there was a side range between colonies of quite uniform strength. Location undoubtedly plays an important part as

does the number of colonies which had had queenless periods at some time during the season. The abundance of pollen during the queenless period appears also to be significant. Some queenless colonies had from 500 to 1150 sq. in. of pollen. When quite a few colonies are found in the spring with pollen filled combs, beekeepers are prone to think they have too much in all colonies. Until some method of management can be devised to get all colonies to build up sufficient reserves without interfering with other phases of management, this excess of pollen should be distributed in so far as possible, to colonies which are low.

Quantitative estimates on the amount of pollen a colony can use prior to the collection of new pollen in the spring represents a comparatively new approach to wintering problems. Observations on the storage of pollen reserves under different systems of management are greatly needed and they will speed up the application of this important factor to efficient wintering. Any help you may lend to this end will be appreciated.

## Secretaries and Reporters Take Notice

Now that all the bee journals are boosting the coming meeting at Valdosta, Georgia, please see to it that we get the news as it should be of what is said there.

Do not say so and so gave a talk. Give us what is said as that is the way to get readers. There is too much so and so in print. Do like Mr. Hutchinson of the old *Beekeepers' Review* did. Give the subscribers the information.

Wm. P. Fritz,  
New Jersey.

## Prospects Brighter

Beekeepers of Utah and Idaho anticipate a better season next year. Early snows in the mountains and rain in September means stored up moisture for the flowers to come. Several projects such as the Pine View dam project which cost \$3,000, 000 will also provide more water so the outlook is better for an improved year following the drought of 1934.

Glen Perrins,  
Utah.

# The Box Hives of Southern China

By Claude R. Kellogg,  
Massachusetts.



Chinese box hives hanging under the eaves. Note the flight entrances.

CUT off from the rest of the country by precipitous mountain ranges and consequent difficulties of travel and intercourse, Fukien Province, on the southeastern coast of China, has remained intensely conservative and is today one of the last strongholds of the fast disappearing charm and romance of Old China. In a region where industries are still in the handicraft stage, where methods of agriculture are largely those of past generations, and where customs change slowly, one would expect beekeeping also to savor strongly of the past. And in this, one is not disappointed for today bees are still kept in box hives and, in so far as is known, in the same type of box hives as those indicated by the earliest recorded essay on this subject in Chinese literature, an essay written about 232 A. D.

But let no one for a moment connect in his mind the beehives of China with the atrocious box hives, or "log gums," still to be found all too commonly in our own country. In con-

trast to the box-hives of this country, —ugly makeshifts that are difficult of access—the Chinese box-hives are not only easy of access, convenient, and efficient for their methods of beekeeping but, in certain regions, artistic as well,—another proof of the assertion that the Chinese people when they undertake anything, be it even the making of a beehive, seem unavoidably to build it in a craftsmanlike and artistic manner.

In passing through the villages of South China one would for a time overlook the beehives for they are not to be found setting on the ground, as with us, but are to be seen hanging against the walls under projecting eaves of the houses,—a custom which gives the bees splendid protection against wind and rain and at the same time keeps them free from interference from farm animals and inquisitive children, otherwise unavoidable in the crowded courtyards of the farm houses. Also, it might be added, since the hives are securely tied in place with ropes, it makes it more difficult

for them to be spirited away at night by light-fingered neighbors.

Some beehives sent to the writer from the northwestern part of the Province of Fukien were very simple indeed, consisting merely of the wooden pails or tubs commonly used in the homes of the people for storing hulled rice and other food products. These wooden pails are tied up by ropes and hang horizontally against the wooden sides of the houses, under the eaves, the covers being left open for about a half inch to allow the bees to fly in and out. The combs are suspended by the bees from the "ceiling," or sides, of the tubs and the only way of getting the honey is to remove the covers entirely.

In the extreme south of China, near Canton in Kwantung Province, are found hives of a totally different type from any seen in other parts of China. These are the basket-hives, made of woven strips of rattan or bamboo and plastered on the outside with mud. In shape they are like two cones fastened together at their apices and with their bases outward, that is, constricted in the middle and flaring outward at the two ends. The brood nest is in the central portion of the hive and the honey is stored in the combs at either side of the nest so that, by removing the two end pieces, the beekeeper is able to cut out the combs of surplus honey for his own use. These hives, like the others used in China, are slung up by ropes and rest under the eaves of the houses.

It may be of interest to note that Varro, who lived from 116-27 B. C., refers in his writings to hives made of double cones, but that he knew of their use in China is doubtful. Hives made of clay and constricted in the center are in use today in the Tanganyika Territory of Africa and in the Island of Malta.

In the vicinity of Foochow, the capital city of Fukien Province, the hives are made of pine wood left unpainted and as a consequence they



A Chinese box hive with the end removed. There is a cluster of bees inside and you can see the comb from which they have been smoked.





An Amboy beekeeper and some of his painted hives. The hives are fastened to a mud wall in a rather dense grove of trees and covered with tiles to shed rain. (The front hive is one of the few unpainted ones seen.)

become thoroughly weather-beaten, blending nicely with the unpainted woodwork of the houses against which they hang. There are, of course, no factory made hives, all the work being done by hand and all hives follow in construction and shape one or two patterns quite rigidly.

The framework of the hive consists of four upright pieces, about one inch square, for the corner posts and four horizontal pieces, two at each end, connecting the corner posts. The tops of the corner posts are sometimes cut in such a way as to leave the upper end in the shape of an octagon. The side boards and top are fastened immovably in place, the top usually forming an arch from end to end. (See the illustrations.) As in Solomon's temple, no nails are used in the construction of these hives, the whole being held together by cleverly made dowels and the movable parts swinging on pivots inserted into the frame before the latter is finally fastened together.

The two ends are made of thin boards and so made that they are entirely removable and the bottom piece is pivoted so it may be swung downward for purposes of cleaning the hive or getting at the bees within. The removable ends make it easy to reach into the hive to cut out the surplus combs of honey at the end of the season (the surplus honey is stored in the outer combs, while the brood nest is in the center of the hive) and the bottom board may be swung downward to inspect for queen cells or to remove them when found.

About a dozen small holes bored through the side wall (or, sometimes through the end boards) serve as entrances and exits for the bees and a sliding door covers up the entrances to prevent the bees from flying or slides back out of the way if it is desired to allow them to fly.

The combs are fastened by the bees directly to the under side of the roof boards and when the combs run crosswise, as they usually do, of the hive, they are also fastened by the bees directly onto the upper parts of the side boards. Cross-sticks are often placed in the hives to help support



An enlarged view of one of the "painted hives." All the woodwork visible is a deep blue and the painting and poem are on a whitewashed mud wall. The clay tiles are to shed rain.

the combs. With only a single, usually thin, board wall and no bee spaces between combs and walls, the hives cannot be left in the direct sunlight or the heat of the sun would melt down the combs very quickly.

One sometimes sees hives with Chinese characters painted over the front or about the doorway and their presence is explained as an aid to the bees in finding their way back to their rightful homes. Sometimes quaint poems concerning bees or even, it may be, nature themes, adorn the hives.

In size the hives compare quite favorably with those of this country, although the individual bees, and the colonies as well, are smaller than those of the Italian race. One of the smaller hives measured 10 inches wide by 10.5 inches deep and 10.5

inches long, making a capacity of 1110.25 cubic inches,—less than half the capacity of a single 10-framed Langstroth hive body. A representative hive of the type usually found in use measured 9.5 inches wide, 12.5 inches in height at the highest central point, and 25 inches in length, giving it a capacity of 2731.25 cubic inches,—a little more than a single 10-frame Langstroth hive body, which contains 2530 cubic inches. One of the largest hives measured 12.5 inches in width, 12.5 inches in height, and 25.2 inches in length,—giving it a capacity of 3781.5 cubic inches, a little larger than a Modified Dadant hive body, whose capacity is 3630 cubic inches. Very few of the colonies filled completely the larger sized hives, often a small and weak colony being found in a large hive.

The most interesting hives of all, however, are those to be found in and about the seaport of Amoy (Fukien Province) and in the territory inland from this port. These hives are made in much the same manner as the hives of Foochow, already described, but differ in several details. The corner posts and all visible parts of the framework are painted a deep, almost ultramarine, blue and the walls between the pieces of framework, instead of being made of boards as in the Foochow hives, are composed of woven bamboo pieces or reeds plastered over with mud and whitewashed on the outside. The clean, white walls and the deep blue framework make a most striking contrast and when paintings of bamboo, flowers, scenery, or quotations from early Chinese poems are used to decorate the white surfaces, the linking of beauty with utility reaches its climax.

Some of the poems found on the hives of Amoy read (in free translation) as follows:

1. "Hastening to take the central parts of the blossoms in the garden,  
Coming before the hive for an audience with the King in the beehives."
2. "Flights of bees to the contest flying out, returning in confusion by themselves."
3. "Spread out prosperously and cheerfully to and from the nectar,  
Increase month after month, and year after year."
4. "The spring (of water) sleeps inadvertently in the morning. Notes of the birds are heard everywhere;  
The noise of wind and rain at night, many or few of the flowers are falling."
5. "The bright moon shines among the pines and the fir trees; the clear spring of water flows over the stones."

(Please turn to page 550)

## An Idea for Securing Pledges for Institute

By W. T. Brand,  
Nebraska.

On a recent trip to Detroit, I made it a point to call on many commercial beekeepers and honey packers to get their views on advertising honey as a food. You would be surprised at the number that said they would be willing to support an advertising program. It seems as though most beekeepers think something should be done to tell the world about honey and yet many of them do not support the American Honey Institute. Why?

**Neglect seems to be the universal excuse.** The Institute has no effective way of collecting pledges. I propose a scheme that I believe will collect pledges at small cost.

The first step would be for the Institute to send blanks to all the beekeepers on their list asking for pledges and when these blanks are signed, they authorize the one who buys their honey to deduct one per cent of their check and send it to the Institute.

The second step would be to get a list of all the honey packers willing to cooperate this way and supply them with invoice blanks on which is written "You may deduct one per cent of this check and send it to the Institute." When the packer sends shipping instructions for the honey, one of these blanks should be enclosed.

Then it will not be difficult for the beekeeper to forget his pledge and the Institute could print a copy of all receipts, expenditures and a list of all cooperating beekeepers and packers and mail a copy to all co-operators as a monthly report. This would give confidence in the Institute and would be the means of setting up a real advertising campaign. Beekeepers could be provided with a list of buyers for his honey and packers with a list of supply sources which would be worth quite a lot to both sides and I believe would eventually be the means of a better understanding between the producer and packer. It would save brokerage fees also.

One of the largest packers with whom I talked said that if the idea were to go across, he would agree to buy no honey from beekeepers that would not pay their share for the expense of advertising the product. Of course we really wouldn't want anybody to go that far, but it shows what the feeling is.

I talked to one packer that doubted it could be done. He said, however, that if enough support could be obtained for my idea, it would raise the price of honey two cents to the producer in a short time; about ten

cents per five-pound pail. This would mean a difference between success or failure to a lot of beekeepers. What do you think two cents per pound would mean to you? Get a paper and pencil and figure it out. To me it means about \$2,400.00 and I figure that worth working for.

Think what advertising has done for sauer kraut juice, tomato juice, yeast. Why it puts cigarettes in the mouths of women and school kids. It will sell honey too if you contribute your bit.

Now I have not failed to mention the greatest advantage, a program of this kind means to you and me. Just think about it.

## Well, What DO You Want to Read?

In our last number, page 496, we asked "What kind of articles would you like to read in the American Bee Journal? Only a few replies have come in. Not over fifteen or twenty. Either the Journal is all right just the way it is or nobody cares particularly what they read in it.

Now won't you help us? What do you want to read about? Just what problems have you with which you want help? That's the kind of information for which you subscribed so you help us by telling what you want to read.

Drop a postal card to American Bee Journal, Hamilton, Illinois, and tell what kind of articles you would like to have in future numbers to help you most.

Do this right away so you won't forget about it!

## Introducing Queens in Fall Broodless Period

I am glad to know that you are trying out late fall requeening. The method is almost foolproof and there is seldom a queen lost if a few simple rules are followed. It is important that the work be done when drones are gone and bees are as near broodless as possible.

In Iowa, this late requeening may be done safely during the latter part of October. The work should be done on cool days when bees are well clustered if possible. It is well to place the queen cage in the cluster or directly over it in a position so that it may be examined and removed without taking out the combs. There is some danger that the queen might be injured by removing the combs. It is a good plan, too, to do the work as quickly as possible so as not to keep the hive open longer than necessary. After the cage has been placed in the hive, the colony should not be opened during a time when bees are flying. Success depends a great deal

on this second operation and is apt to result in failure if done when robbers are present.

During my experience with this method of requeening, I have found that colonies with queens fall introduced build up faster and make better colonies than those with queens introduced in the spring. The fall queens are well established and ready to go and there is not the delay in the egg laying period as there is when queens are introduced in the spring.

Howard Shipton,  
Iowa.

## Betty Crocker Scores Again

Have you seen the honey-pumpkin pie recipe in the Washburn-Crosby advertising for November? Pumpkin pie with honey and whipped cream, they call it "New and marvelously delicious." Betty Crocker gives the cost of the ingredients for the pie. The recipe with fourteen others is free inside any sized sack of "Kitchen-tested" flour.

Now, get that? This honey-pumpkin pie recipe with fourteen other recipes is free inside of every sized sack of kitchen-tested flour. Is that advertising for honey? And the pie is in colors too, real pumpkin, fluffy with cream and honey right in the center of every piece. Our hats off and many thanks to General Mills!

This advertisement was not only in one paper but appeared in a large number of papers with millions of circulation. It was in "Successful Farming" which has a wide circulation, on the back page in colors. The same ad is in "Household Magazine" with a large Mid-West circulation. Also in Saturday Evening Post with a circulation of over 2¼ million. Nobody knows just what the total circulation of this one advertisement has been.

If you are interested, write thanks by all means to General Mills, Minneapolis, Minnesota, for the attention of Betty Crocker.

**And please remember that this contact and this result is the work of American Honey Institute.**

## Pardon, Mr. Beach, 50 Per Cent Is Right

May I call your attention to a correction in my article, page 483, November, title "Carbolic Acid for Foul-brood." Toward the end it reads "I use a 15 per cent solution." It should read "I use a **50 per cent solution.**"

B. E. Beach,  
Illinois.

Right, Mr. Beach, that is entirely our fault. It is a typographical error. Readers please note, **50 per cent carbolic acid, 50 per cent water.**

# Experiments With Mead

By F. Filipello and G. L. Marsh,

Fruit Products Laboratory,

University of California.

THE use of honey for mead has long been known, dating back to biblical times. Since repeal of prohibition great interest has been shown in this beverage of the ancients. Hence it has been our object to revive this use of honey, by providing a tested and dependable method for its preparation. In this connection a number of experiments were conducted to study the conditions and the factors involved in the preparation of mead. Our interest has been limited chiefly to the following points:

- (1) Effect of nutritive salts on the fermentation process.
- (2) Effect of variety of honey on the fermentation and quality.
- (3) Effect of variety of yeast starter on the fermentation.
- (4) Clarification of the Product.
- (5) Other related Products.
  - (a) Alcohol for fortification.
  - (b) Brandy.

I. Several combinations of salts were used to determine their effect on the fermentation rate, as follows:

IA { Check no added salts.

ID { Fabian formula No. 1. (1)

Fabian formula No. 2. (1)

IE { 0.1% by weight. Ammonium Chloride.  
IF { 0.05% by weight. Potassium Bicarbonate.  
IF { 0.05% by weight. Sodium Phosphate.

IG { 0.1%  $\text{KH}_2\text{PO}_4$  (potassium di-hydrogen phosphate).  
IH { 0.2%  $(\text{NH}_4)_3\text{PO}_4$  (ammonium phosphate).

II { 0.2%  $\text{KH}_2\text{PO}_4$  (potassium di-hydrogen phosphate).  
IJ { 0.2%  $\text{NH}_4\text{Cl}$  (ammonium chloride).

IK { 0.2%  $\text{KH}_2\text{PO}_4$  (potassium di-hydrogen phosphate).  
IL { 0.2%  $(\text{NH}_4)_2\text{SO}_4$  (ammonium sulfate).

In each case the salts in the above-mentioned percentages were added to equal volumes of a honey syrup containing 30 per cent by weight of sugar. The fermentation rates were determined by daily loss in weight of flasks of the fermenting liquids.

The results are given in Table I and plotted in Figure 1. It may readily be seen from Figure 1 that the addition of salts containing Potassium, Nitrogen and Phosphorus has the general tendency to accelerate

the rate of fermentation. The effect is also noted from the percentages of alcohol in Table I. The alcohol yield was more than doubled.

II. and III. In another series of experiments various varieties of honey were used. The honey in each case was diluted to 30 per cent sugar by weight. In each case the following salt combination was added:

KHC4H4O6 (Cream of Tartar) ----- 0.2% by weight

$(\text{NH}_4)_3\text{PO}_4$  (Ammonium Phosphate) ----- 0.1% by weight  
 $\text{C}_6\text{H}_8\text{O}_7$  (Citric Acid) ----- 0.5% by weight  
 $\text{MgCl}_2$  (Magnesium Chloride) ----- 0.025% by weight  
 $\text{CaCl}_2$  (Calcium Chloride) 0.025% by weight

The following samples were used:

I. Buckwheat Honey.  
Yeast—Burgundy variety—*S. ellipsoideus* added.

II. Imperial Valley Alfalfa Honey.  
Burgundy yeast added.

TABLE I. EFFECT OF SALTS ON FERMENTATION RATE  
(Reported as loss in grams at intervals.)

Time hours	IA grams	IB grams	IC grams	ID grams	IE grams	IF grams	IG grams	IH grams	II grams	IJ grams	IK grams	IL grams
18	1.0	0.7	1.0	1.1	1.1	0.5	0.6	0.5	0.6	0.8	1.1	0.9
27	1.1	0.8	1.4	1.3	1.1	1.4	1.6	2.0	1.3	1.3	2.0	1.6
45	0.7	0.6	2.1	2.0	1.7	2.2	2.6	2.6	1.7	1.7	3.5	3.4
52.5	1.1	1.0	3.0	2.8	2.6	2.7	3.3	3.6	2.4	2.5	4.8	4.5
66	2.0	2.3	5.1	4.8	4.1	4.5	5.0	5.6	4.4	4.1	6.8	7.1
75	2.2	2.0	5.3	5.1	4.3	5.0	5.7	6.1	4.6	4.4	7.6	7.8
90	3.0	2.9	6.8	6.3	5.7	6.4	7.3	7.7	5.8	5.6	9.6	9.6
99	3.2	2.9	7.0	6.6	6.2	6.6	7.7	8.1	6.2	6.0	10.0	10.4
114	4.1	3.9	8.5	8.1	7.6	8.1	9.5	9.8	7.6	7.6	11.7	11.8
123	3.8	3.6	8.8	8.2	7.4	8.0	9.9	10.1	7.5	7.5	12.0	12.0
138	4.3	4.4	8.9	9.7	9.0	9.2	11.2	11.3	8.5	8.6	13.1	13.1
164	5.1	5.4	11.6	11.3	10.7	10.9	12.9	13.3	10.0	10.1	14.5	14.2
173	5.6	5.5	12.0	11.6	10.9	11.5	13.5	13.6	10.6	10.6	14.9	14.4
188	6.0	6.0	12.8	12.6	11.8	12.2	14.2	14.7	11.3	11.3	15.3	14.9
196	6.4	6.5	13.5	13.3	12.4	12.7	14.7	15.2	11.9	12.0	15.7	15.5
212	6.6	7.2	14.3	14.1	13.5	14.0	15.6	15.9	13.2	13.1	16.4	16.2
240	7.6	7.9	15.7	15.2	14.5	15.1	16.2	16.6	14.4	14.3	16.8	16.7
260	7.7	8.2	16.1	15.8	15.1	15.7	16.4	16.6	14.9	14.6	17.0	16.9
284	8.4	8.6	16.5	16.1	15.6	16.1	16.9	17.1	15.6	15.6	17.3	17.2
308	9.4	10.1	17.5	17.4	16.9	17.4	17.8	18.0	17.0	16.7	18.3	18.2

Alcohol  
% by  
volume 4.0 3.7 8.17 8.00 8.17 8.00 8.33 8.22 8.10 8.03 8.05 8.00

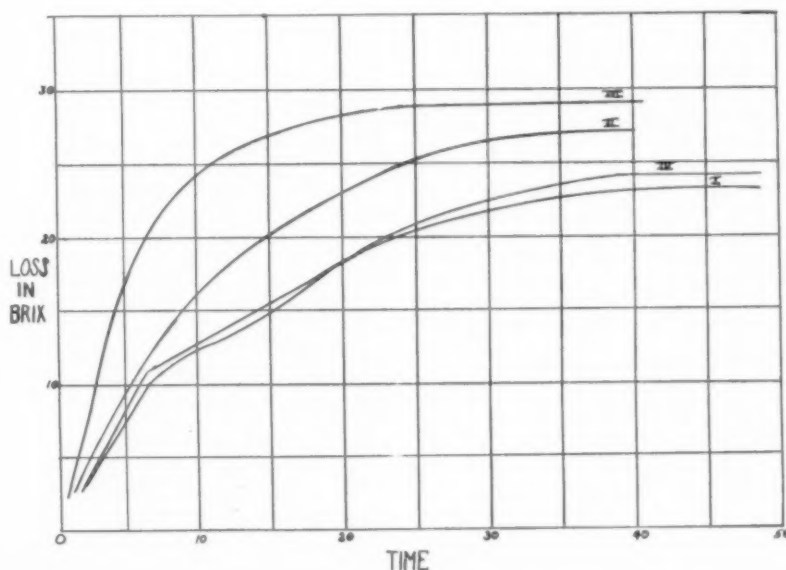


FIGURE 1.



III. Imperial Valley Alfalfa Honey.  
Compressed yeast added.

IV. Thistle Honey.  
Burgundy yeast added.

Figure 2 shows the results of the above fermentations. It will be noticed that curve III, corresponding to experiment III above, represents the most rapid rate. Figure 2 shows definitely the effect of yeast and the effect of variety of honey. The alcohol contents after fermentation were as follows:

- I. 12% by volume.
- II. 13% by volume.
- III. 13% by volume.
- IV. 13% by volume.

These correspond very well to the alcohol content of California wines made from grapes.

2. By the addition of Bentonite, a negatively charged suspension of this substance in water. It has been shown that positively charged colloids present in the honey are responsible for a good part of the cloudiness. (Lothrop and Paine (2).) Hence Bentonite will cause the flocculation of these particles. By experiment it was found that a suspension of Bentonite in water of a strength of 5 grs. Bentonite per 100 cc could be used.

Bentonite 5 gms/100 cc	cc Mead	Results
0	100	Not clear.
5	100	Good, clear, rapid settling.
10	100	Good, clear rapid settling.
15	100	Slow clearing and settling.
20	100	Slow clearing and settling.
25	100	Slow clearing and settling.

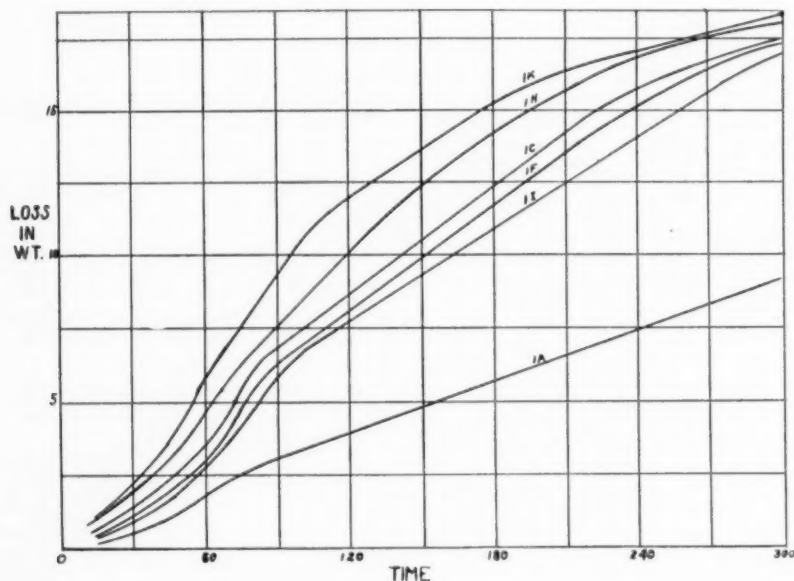


FIGURE 2.

IV. The mead obtained from the fermentation of honey was very cloudy as a rule, and could not be clarified by ordinary filtration. Dr. Eckert of the Entomology Department, University of California at Davis, has obtained a clear product on allowing the mead to stand at a cool temperature for a period of one year. However, more rapid methods would be commercially desirable. Clarification was accomplished by two methods:

1. By the addition of **filter-cel** or **super-cel**, a diatomaceous earth acting as an absorbing agent (about 1 gr. per 100 cc.) followed by filtration. The solution may then be filtered brilliantly clear by any standard commercial filter. The filtered mead aged rapidly and after a few weeks became much like a good white grape wine in flavor and appearance. It should be a good table "wine."

The last three samples were easily made clear by filtration. However, it is seen that the optimum amount is 5 to 10 cc of a 5 gms/100 cc Bentonite suspension per 100 cc mead. This corresponds to 5 to 10 gallons of a suspension of about 5 per cent solution of the Bentonite per 100 gallons of fermented mead. The Bentonite is prepared by stirring Bentonite in cold water and allowing to stand several days with frequent stirring until well emulsified.

V. Other Products. Mead was distilled and a honey brandy obtained. Brandy of 50 per cent by volume strength alcohol was then aged in charred oak kegs. The charcoal aids oxidation of the bitter principles of the brandy, while the extracted tannin from the oak tends to mask any roughness of the alcohol. Theoretically, about 10 to 12 gallons of brandy of 50 per cent alcohol content are

obtainable from 100 pounds of raw honey. By adding a little, 5 to 10 per cent by weight, of honey to the brandy a very pleasing beverage of mild honey flavor was obtained.

#### Conclusions

1. Certain nutrient salts aid fermentation of mead.

2. Variety of honey and variety of yeast affect the rate of fermentation and the quality of the product.

3. A very satisfactory honey brandy has been obtained; likewise a brandy flavored with 5 to 10 per cent of honey added after distillation.

#### Acknowledgment

Thanks are due to Professor W. V. Cruess for directing the experiments, and to Professor J. E. Eckert for the honey used and for suggestions given during the experiments.

#### References

- (1) Fabian, F. W., Mich. Agr. Expt. Sta. Circ. Bull. No. 85. February, 1926. pp. 1-13.
- (2) Lothrop and Paine, J. I. E. C. 23 : 328 (1931).

## Red Clover Pollination

A letter from Mr. Michael S. Donducov, of Tula, Russia, advises us that we were in error in crediting the book on "Red Clover Pollination," mentioned in our May issue, to the Tula Research Institute. Not being able to read Russian we are unable to tell at what place the work was done.

The following quotation from the book also appears to have given a wrong impression in this country:

"In order to secure a proper clover pollination, the following measures have been suggested: (1) breeding and preserving of bumblebees, (2) utilization of melliferous bees, providing their proboscides are long enough to allow them to get honey out of the deep tubes of clover blossoms."

Some of our readers appear to have received the impression that the breeding of bumblebees had been undertaken in that country, whereas we only stated that it had been under consideration. The book stated that they had not as yet made any practical application of this suggestion. Our correspondent advises us that Prof. Malishev, of Leningrad, is making a study of bumblebees with a view of their use in clover pollination.

## Smoker Fuel

Nearly every beekeeper has his favorite smoker fuel. Prof. E. J. Anderson, extension apiarist of Pennsylvania State College, prefers partly rotten apple wood. The inspector here uses tulip tree wood. Burlap, cotton rags, corn cobs, hardwood chips, sumac heads, and oily waste are other favorites.

S. F. Haxton,  
Pennsylvania.

# A Beekeeper With Some Original Ideas

By Hy. W. Sanders,  
Manitoba.

A visit with Nicholas Pankiu, of Dufrost, Manitoba, who has built up a fine plant and a 500 colony apiary in the past decade.



Runway for trucks; honeyhouse of N. Pankiu. When finished there will be a bee tight building at the top of the runway with doors that can be opened to let the truck in, then closed during unloading.

VISITORS to recent winter conventions of the Manitoba Beekeepers' Association may recall a tall, stoutly-built man with a frank and boyish countenance who on such occasions is usually the center of a group engaged in discussing some phase of practical apiculture, to which he has contributed a thought-provoking suggestion. He is Nicholas Pankiu—pronounce it "panky-you," please—and he hails from Dufrost, Manitoba, a point on the railroad some forty miles southeast of Winnipeg. Half a mile from town he lives and has his headquarters on a farm of 160 acres, and he owns a section, 640 acres several miles away. Much of this land is in sweet clover, but Mr. Pankiu does not farm much himself. He lends the land to his neighbors so long as they accommodate him in the matter of sweet clover production. He is a bee specialist, and like a wise man he sticks closely to his specialty.

Ten years ago he came to the neighborhood from his former location north of Winnipeg. A close friend was teaching school there and by visits to him Mr. Pankiu became interested in the locality. Ukrainian by origin, both he and his wife were Canadian born, and they have a healthy family of four rising young Canadians. In the decade since his arrival he has increased his bees every year until he has now rather more than five hundred colonies which he operates in ten separate yards, in most cases having bought from two to five acres of land for his locations. Besides the bees he has the aforementioned 800 acres of land of his own, and a fine outfit with truck and power machinery for extracting. His buildings are the best we have seen so far in Manitoba devoted exclusively to the bees.

These results have been built mainly on sweet clover. The first year he bought 900 pounds of seed and gave it to the neighboring farmers, who had then scarcely considered its culture. He charged them nothing for the seed but arranged that when they threshed seed themselves they should return what he had provided in the first place. This formed a sort of revolving fund of sweet clover seed which has grown until today he has some 6000 pounds for seed loans of this character, as well as the clover that is growing on his own land. His honey crops have been large and reliable, though during the season just past the yields have been cut by the drought the same as in other locations



Bee cellar of N. Pankiu, Dufrost, Manitoba.

throughout the southeastern part of Manitoba.

He has just completed the fine building shown in the picture. It is 30 feet by 55, and is 2½ stories high. In the front part of the building is a large shop with concrete floor, and double walls with planer-shavings between. This can be heated for winter work. There is a large double door so that the truck can be taken inside for repairs or overhaul, or for unloading under conditions which make it undesirable to unload outdoors. In this shop are circular saws and planers and a foundation mill, for Mr. Pankiu makes most of his own equipment. Dufrost is on the border of a wooded region, and he knows where to go in the winter time to get his own logs and have them sawed. Most of the lumber used in this building and his home was obtained locally, and Mr. Pankiu with his two men and some outside help did the work of erecting it. The extracting room is on the second floor so that a gravity flow can be secured for the honey. The truck is driven up a long incline at the side of the building and unloaded at a door on the second floor. Hand trucks receive the supers and are taken singly to the extractor which is a 30-frame radial driven by a small gasoline engine. Tanks in the room below receive the honey for clarification and canning.

It is in the treatment of his cappings that Mr. Pankiu has contributed one of his most useful ideas to Manitoba beekeepers. The season here is so short that large producers find it difficult to get all the extracting done before cold weather. Cappings will drain while it is warm, but as soon as the cold nights come the honey granulates within a couple of days—sometimes in 24 hours—and draining is too slow. Many experiments have

been made to solve the problem including pressure, centrifugal extractors and so forth, and various types of melters. The latter have mostly been rejected as they darken and discolor the honey, but Mr. Pankiu has hit upon a way of using heat without ill effects. Outside of the building and some distance from it he has a small boiler set in concrete, and arranged for burning wood, the cheapest fuel in the neighborhood. Steam is thus generated and taken to the extracting room by a half-inch pipe. Here it divides, one branch giving steam for the uncapping knives, and the other supplying steam to a coil of rubber garden hose which is coiled inside a small tank. The cappings fall into this and it provides just enough heat to melt the wax momentarily. The honey drops through without getting a chance to be overheated and drains from a honey gate into the tanks on the floor below, while the wax accumulates in little globules about the size of peas, easy to remelt. The cost of the whole apparatus is trifling, the fuel bill is nominal, and the results seem to be exactly what is required.

He has done considerable wintering in the past and has a bee cellar holding about 300 colonies. This has three sets of doors to keep out the cold of a Manitoba winter. However he is wintering only very few this year as he considers it is cheaper to extract all the honey in fall and kill the bees, replacing by packages in spring. However, he is concerned that good hereditary strains of bees should not be destroyed and each fall he selects his best queens and ships them to the southern breeder who supplies his packages. From these queens his new ones are reared for the following season. He has plans for going south and establishing an apiary himself, possibly shipping his bees south instead of killing them off, staying in the milder climate during the winter months and then coming north again in April with packages from them.

In discussing the wintering problem, Mr. Pankiu feels that replacement by package bees depends on the maintenance of such conditions in the industry as will assure a good supply at reasonable prices. If wintering in the north is again to be the rule, Mr. Pankiu talks about a system of beekeeping which he says is used under similar climatic conditions in Bohemia. He is to try it out on a small scale next year. Briefly it is as follows: the bees are housed in a building with a shack roof, the highest side facing south. Three tiers of hives are placed on shelves within the building and given entrances through the walls, which are insulated with planer shavings. During the four coldest months of the winter, the bees are carried to a deep cellar under the building. In spring if a very cold snap comes the building can be heat-

ed with a stove, and a system of feeders can be used for stimulation both in spring and fall. In the original plan the bees are set for the summer months on a scaffold of planks in front of the building, the hives, of course, occupying their relative places. Mr. Pankiu plans to take them to outapiaries instead. However, this change in detail does not affect the main principle of the plan, which is an interesting combination of cellar and outdoor wintering.

For the honeyflow he unites his colonies, taking brood from all that are weak to strengthen up the moderate colonies, and even throwing three colonies into one if necessary. The queen and a frame of brood are generally left to build up for winter if the season is early enough. Another detail of his management is interesting, and that is the elimination of old bees in the fall. Some Manitoba beekeepers have gone to a lot of labor in moving their bees a short distance about the first of September so that none but young bees might be left for winter. Mr. Pankiu's plan is simpler. He has the bees in three stories, and he says that he has noticed that practically all the old, shiny, worn-out bees and drones are in the bottom story about October 1, while the young bees are occupying the second and third stories. So he lifts off the upper part of the hive, being careful to get the queen, and cyanides the bottom story.

He sells his honey to the wholesale dealers in Winnipeg, taking in a third of it in fall, another third soon after Christmas and the balance in May. In this way he gets the benefit of the higher prices that usually prevail when the large fall offerings are out of the way.

He has had a battle with American foulbrood and here again his methods are original and effective. He has taken three steel drums and set them in concrete over a firebox, and in cold weather when no bees are flying, the hives and supers which have been infected or exposed to infection are boiled. He can do three at a time and the apparatus though crude is effective. The boxes are boiled for twenty minutes and the melted wax is dipped from the tanks and put through a press nearby. As he has his own foundation mill the only loss he has with a diseased colony is that the bees have to build new combs. No effort is made to save the bees but are replaced by a package the following spring. He says that he has had no recurrence of disease in the boiled hives.

## To Troubled Mothers

Have you had trouble in getting little brother or sister to take his or her much needed cod-liver oil? Here is a way my wife has found very successful in the case of our little two-

year old boy. For a long time he took his oil very nicely by having a spoonful of tomato juice as quickly as possible right after the oil. There came a day when this no longer worked so I suggested she try the honey and lemon mixture we had prepared as a cough medicine, which is very good for colds.

This mixture was then used instead of the tomato juice, being given by having a spoonful of oil in one hand and a spoonful of honey and lemon in the other to make it easy to get the honey taste quickly on top of the oil. He now asks his mother almost every day for his **nice nice** as he calls it.

The honey and lemon mixture is made as follows: Take a lemon and bake in the oven until well done then cut open and scrape the contents into a tumbler full of honey, being careful to keep out all seeds and it is then ready for use after being well mixed.

W. S. Ash, Minnesota.

## Stool for the Apiary



It is not very comfortable and sometimes not very convenient to sit on the edge of an upturned hive lid while looking through a hive or working with the bees.

The small stool shown in the picture is easily made from light weight, five-eighths inch material. It is twelve inches high, eighteen inches long and eight inches wide. Hand holds are cut in the sides to make it easy to carry. It may be painted green or any pleasing color to harmonize with the general scheme of the outyard.

One may very easily make the stool so that it will fold up. In this way it takes very little space to carry it in the car from place to place. It is so simple to make that one can easily furnish one for each outyard and have one handy at all times.

The hives should be spaced not closer than two feet apart to use the stool comfortably. This regular spacing helps to make a neat and attractive yard.

Benj. Nielsen,  
Nebraska.



# Holiday Honey

By Mrs. Benj. Nielson,  
Nebraska.

Recently while on a refreshment committee for a church affair, one of the committee asked, "Why don't we serve some of those delicious Honey Fruit Cookies of yours?" So, each member armed with my recipe baked her share, and we served to a gathering of seventy. Requests for the recipe came piling in—and were taken care of promptly.

In planning the menu for a party, dinner, or entertainment of any kind, I usually plan to work in at least one honey combination. And when called upon for donations to bake sales, Rotary dinners, etc., honey is always used. It is splendid advertising.

Cookies made from the following recipe, and cut into stars, Christmas trees, jolly Santas, etc., may be made ahead of holiday preparations, decorated with colored sugar or other festive designs, and have a delightful flavor, because of the "aging."

## Honey Ginger Cookies

- ¾ cup shortening;
- ¾ cup sugar;
- 1 egg;
- ½ cup water;
- 1 cup honey;
- 1 heaping teaspoon soda;
- 6 cups flour;
- 1 tablespoon ginger;
- ½ teaspoon salt.

Cream shortening and sugar, add egg well beaten, honey and water in which the soda has been dissolved. Stir in sifted dry ingredients, using flour enough to make a soft dough. Roll out to about ¼ inch thickness, cut in desired shape and bake in fair-

ly hot oven, 400 degrees for 12 to 15 minutes.

When unexpected guests drop in, Honey Gingerbread can be stirred up in a jiffy, never fails, and is a delicious treat served hot or cold, with honey-sweetened whipped cream.

## Honey Gingerbread

- ½ cup shortening;
- ½ cup sugar;
- 1 egg;
- 1 cup honey;
- 2½ cups sifted flour;
- 1½ teaspoons soda;
- 1 teaspoon cinnamon;
- 1 teaspoon ginger;
- ½ teaspoon cloves;
- ½ teaspoon salt;
- 1 cup hot water.

Cream shortening and sugar. Add beaten egg, honey and dry ingredients sifted together. Add hot water last; beat until smooth. The batter is thin but it makes a fine cake. Bake in greased shallow pans, 35 minutes, in moderate oven (325 to 350 degrees). Baked in muffin tins and given a chocolate icing this recipe makes delicious cup cakes.

Everyone makes Chocolate Fudge and when made with honey it is never grainy or hard. Made by this recipe, candy kept six weeks, proved to be as soft and creamy as when made and much improved in flavor! How nice to be able to make at least part of your Christmas candy before the busiest time and know it will be better flavored because of the early preparation.

## Honey Chocolate Fudge

- 2 cups sugar;

- ¾ cup cream;
- 2/3 cup honey;
- 1 square chocolate;
- 1 teaspoon vanilla;
- Nutmeats chopped.

Add honey to sugar, then cream and grated chocolate and mix thoroughly. Cook until mixture forms a soft ball when tried in cold water. Remove from the fire, and add vanilla. Beat until very stiff, which will require about twenty minutes. Nuts are added just before pouring the candy on a buttered plate. When nearly cold cut in squares. Though this requires more beating than the ordinary fudge it is well worth the extra effort.

And sometime when you fail to have enough bread to spread with butter and honey try these:

## Plain Honey Muffins

- 2 cups white flour;
- 2 tablespoons honey;
- 4 teaspoons baking powder;
- 3 tablespoons butter;
- 1½ teaspoons salt;
- 1 egg;
- 1 cup milk.

Mix and sift dry ingredients. Beat egg very light and add honey. Stir dry ingredients and mix well. Add melted butter. Bake in greased muffin tins in a hot oven, 400 degrees, 20 to 25 minutes. Serve piping hot with plenty of butter and honey.

## The Otherwise Bee

The thing that people mostly praise,  
Saith a writer, of the bee,  
Is her vaunted labor—  
Her laborious industry.

Methinks, with fuller knowledge,  
Or with apter eyes to see,  
They'd find an apter figure—  
At least, in my locality.

W. H. Hull,  
Virginia.

## Illinois' Whistler

"Bob White," WLS. Ever hear him? Great tunes of birds, and sounds of the four footed. He's part of the famed Barn Dance gang that delight so many audiences. We know him best perhaps as Inspector Duax, northern Illinois beekeeper, and head of the disease eradication work in Illinois.



# A New Method of Processing Honey\*

By R. E. Lothrop and H. S. Paine,  
Carbohydrate Division, Bureau of Chemistry and Soils,  
U. S. Department of Agriculture.

RECENT investigations conducted in this Division have resulted in the development of a rapid or "flash" method of processing honey that prevents loss of the delicate flavor, and in addition greatly improves the appearance of the bottled product. This method was developed after a careful study had revealed the extreme sensitiveness of honey to injury by heating for any extended period of time, even at comparatively moderate temperatures. Heat treatment in general tends to drive off the more volatile flavoring constituents to which the aroma and finer flavor characteristics are due.

The presence in honey of finely divided particles of suspended matter, and in many cases the additional presence of fine air bubbles, produces a distinct cloudiness that detracts from its general appearance. These substances are also primary factors in the formation of surface foam and scum layers. Suspended particles and finely divided air bubbles also appear to play a part in hastening granulation of bottled honey, which it is always desirable to retard as long as possible.

The usual method of processing consists of heat treatment, during which part of the suspended air bubbles and the more grossly suspended particles tend to rise to the surface, where they form a scum and can be removed. This results in very imperfect clarification, however, so that the honey remains distinctly turbid, and the tendency to form surface scum layers still exists. As the treatment is usually carried out in large tanks, the honey is kept warm for a considerable period of time, with resulting danger of injury to the delicate flavor and the possibility of some darkening in color, both of which greatly reduce the market value of the honey. It is desirable therefore that, in processing, honey be subjected to heat treatment for a minimum period of time.

The new method consists in intimately mixing a small proportion of an inert filter aid with the honey,

after which it is passed through a metallic coil immersed in water, the temperature of which is maintained at the desired point (140-160° F.). From the coil the honey passes into a filter press, which is enclosed and maintained at approximately the same temperature, so as to prevent cooling of the honey when it enters the filter. Upon emerging from the filter press the honey is ready for bottling.

During filtration the added filter aid is removed and with it is removed particles of suspended matter and minute air bubbles, which are largely responsible for the turbidity of extracted honey. When processed in this manner honey is quite clear and sparkling, in contrast to its usual dull and turbid appearance. In addition there is no tendency for later formation of surface scum layers on the bottled honey, since the substances which produce scum layers are removed during filtration.

This method of processing was tested on a semi-commercial scale in a small plant\*\*, the arrangement of equipment for which is shown in Fig. I. Tank A serves as a supply tank, where large air bubbles and more grossly suspended solid material are allowed to rise to the surface. In practice it would serve to receive the honey from the melters. B is a mixing tank where the honey and filter aid are thoroughly mixed by the slow speed mixer C, which rotates at approximately 25 r.p.m. It is necessary to fill the tank with honey above the top paddle before the mixing is started, otherwise air will be incorporated with the honey. After thorough mixing, the filtration operation is started. The honey flows by gravity to the rotary honey pump F. From here it is pumped through the aluminum heating coil D, immersed in a tank of warm water. The water temperature is maintained at a few degrees above the temperature to which the honey is to be heated (140-160° F.) by means of a small steam coil, and the water is kept agitated throughout the filtration operation. In this way the honey is heated to full filtration tem-

perature very rapidly, the time required being only about six minutes. From the heating coil the honey flows into the filter press E, where filtration takes place, and it is ready for bottling immediately after it is received from the press. The total time during which the honey is in process of filtration, including the time of heating in the coil, is approximately 15 minutes. At the end of the filtration operation, the press is opened, and the coil drained by means of the valve H.

The rotary honey pump should not rotate at a speed greater than 300 r.p.m. when the honey is being pumped cold. The speed and capacity should be chosen so that the initial filtration pressure is below 5 lbs. per sq. in., and the final pressure between 50 and 60 lbs. per sq. in. The arrangement of the piping and heating coil between the pump and press should be such that no air traps are formed, that is, the piping and coil should not slope downward at any point, but rather a gradual upward slope should be maintained. Air pockets trapped in piping or coil tend to produce finely divided air bubbles in the filtered honey.

A suitable filter press for this purpose is a 2-eye, closed delivery plate and frame press, having the feed in the lower corner, and the discharge in the opposite upper corner. Plates and frames should be made of non-corrosive metal (such as aluminum). One-inch frames are suitable for filtrations in which diatomaceous earth to the extent of ½ % of the weight of the honey is used as a filter aid. Under these conditions, at the end of the filtration cycle of 4 to 5 hours, the frames are completely filled with cake. A light cotton filter cloth of fairly open texture which does not offer excessive resistance to the flow of the viscous honey should be used.

Only a rapid filtering grade of diatomaceous earth\*\*\* can be used for filtering honey. For a high degree of clarity, most types of honey require the use of filter-aid equal to about

\* Presented before the Division of Sugar Chemistry at the 88th Meeting of the American Chemical Society, Cleveland, O., September 10 to 15, 1934.

\*\* Erected in the filtration laboratory of T. Shriver & Co., Harrison, N. J., whose cooperation in these tests is appreciatively acknowledged.

\*\*\* "Hy-Flo Super-cel" manufactured by The Johns-Manville Corporation, New York City, or "Dicalite Special Speed-flow" manufactured by The Dicalite Co., New York City, or filter media of similar characteristics.

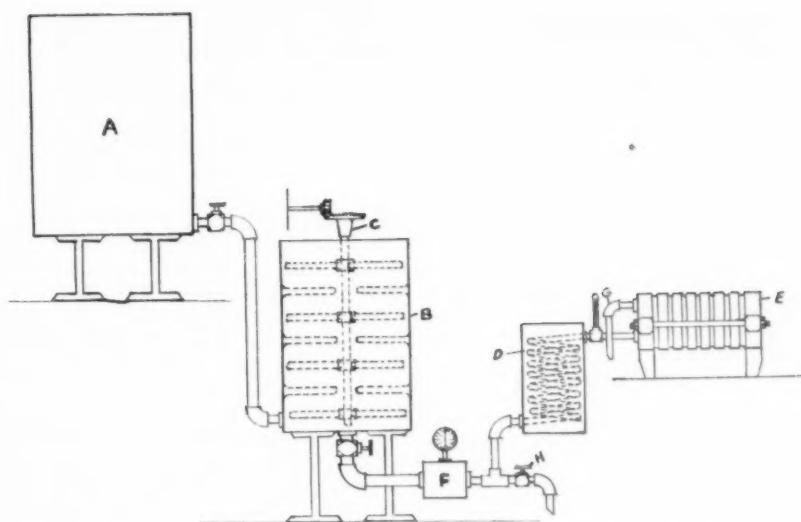


Figure 1. Arrangement of equipment for filtering honey. A—Supply and settling tank. B—Mixing and feeding tank. C—Slow speed mixing device. D—Heating coil. E—Filter press. F—Rotary honey pump. G—Exit from press. H—Valve for draining coil.

$\frac{1}{2}$  % of the weight of honey filtered. When this proportion of filter aid and a temperature of  $140^{\circ}$  F. are used, a filtration cycle will be complete in about  $4\frac{1}{2}$  hours, based on average filtration rates of nearly 3 gallons per sq. ft. of filtering area per hour. On this basis 2500 to 3000 lbs. of honey can be filtered daily with a 12-inch, 12-chamber filter press which has a filtering surface of 20 sq. feet.

Admixture of the diatomaceous earth and honey requires special care in order to avoid introducing considerable quantities of air into the honey. The dry filter aid cannot be added directly to the honey, but must first be prepared in the form of a soft cake. This is carried out as follows: the requisite quantity of diatomaceous earth is weighed, suspended in water, and brought to a boil. This serves to drive out air which is absorbed on the surface of diatomaceous earth particles. The suspension is then poured on a round vacuum filter containing a porous bottom, which is covered by a piece of filter cloth, and the excess water removed. The suction should be stopped before any air is drawn into the cake, that is, just as the water layer disappears into the surface of the cake. A honey syrup consisting of 4 parts of honey and one part of water is immediately poured over the cake, and the suction continued until the layer of honey syrup just disappears into the surface. The proportion of honey syrup used is approximately 3 times the weight of filter aid, this amount usually being just sufficient to replace the water in the cake without any loss of honey syrup. In this way any appreciable dilution of the honey is avoided, and no loss is incurred, since the honey contained in the prepared filter aid is incorporated in the mixing tank. The soft cake is

then added to the honey in the mixing tank, and dispersed by means of the slow speed agitator. It is important to incorporate the filter aid thoroughly, so that it is uniformly distributed throughout the honey before the filtering operation is started.

#### Costs

It is estimated from results obtained with the small plant that costs of processing honey by this method will range from 12 to 25 cents per 100 lbs., depending on the clarity desired, and the quantity filtered daily. In general the larger the amount to be filtered, the lower will be the unit cost. Almost half this cost results from loss of honey in the press cake, so that the smallest proportion of filter aid that gives the desired clarity should be used. Some possible use for the honey remaining in the cake may be found.

In honeys which have an original turbidity somewhat less than average, good clarity can be obtained by using a smaller proportion of filter aid, in which case cake losses are reduced, and better filtration rates obtained. Owing to large differences in behavior of the various types of honey, filtration rates vary considerably and are influenced by a number of factors such as floral type, density of honey and nature and quantity of suspended matter present. Tupelo honey, for example, filters much more slowly than clover honey of equivalent density, because of the presence of a somewhat greater proportion of suspended matter. It is not always possible, therefore, to state the exact proportion of filter aid to use in order to obtain the desired degree of clarity, or to predict the exact filtration rates. In general, however, light-colored honeys, such as the clovers, orange sage, mesquite, alfalfa, and fireweed, of approximately normal density will

be well clarified and have average filtration rates of approximately 3 gals. per sq. foot of filtering area per hour over a 4 to 5 hour filtration cycle, when filter aid equal to  $\frac{1}{2}$  % of the weight of the honey and filtration temperature of  $140^{\circ}$  F. are used. By increasing the filtration temperature to  $160^{\circ}$  F. an increase of approximately 25% in filtration rates is obtained. The proportion of filter aid will range between  $\frac{1}{4}$  and  $\frac{1}{2}$  % of the weight of the honey filtered,  $\frac{1}{2}$  % to be considered the upper limit commensurate with good economy.

Honey processed in this manner is found to retain its liquid state satisfactorily, owing to careful temperature control, thoroughness of the heat treatment, and removal by filtration of any minute sugar (dextrose) crystals not dissolved by the heat treatment. The mineral constituents, biological agents (enzymes), and all other normal constituents are retained intact. The honey is brilliantly clear, and there is no subsequent formation of surface scum layers, thus greatly enhancing its appearance when packed in glass containers.

Because of the short period of exposure to processing temperature, no detectable loss of the delicate honey flavor and aroma is incurred. This is especially significant, since loss of the more volatile flavoring constituents results in honey of nondescript flavor, thus impairing the property of honey which is chiefly responsible for the advantageous position it occupies with respect to similar saccharine liquids. As far as known, no method of processing used at present retains fully the flavor possessed by honey when freshly extracted from the comb. It is this loss of flavor in processing that has led to the rather extensive marketing of honey in granulated form in Canada and certain European countries. It is felt, therefore, that this method of processing, which preserves the more delicate flavor characteristics intact, and in addition considerably improves the general appearance of the bottled product, will serve as a stimulating factor in the sale and consumption of honey.

## Starch in the Syrup

The milky appearance in syrup made from powdered sugar, which Wisconsin speaks of, is caused by starch which the manufacturers mix with the sugar to prevent it from hardening. Whether the starch is stored with the syrup or not I cannot say. When feeding syrup for winter made from powdered sugar, I let it stand a day or so to permit the starch to settle. Most of the pure syrup can be poured off which makes it safe to feed for winter.

Moody Brenneman,  
Indiana.



## FROM THE LITTLE BLUE KITCHEN



### "FOR HE WAS HUMAN TOO."

"I wonder," said a friend to me,  
"If Christ should suddenly appear  
Upon the earth at Christmas time,  
And mingle with us daily here  
What He would think of all the ways  
We humans celebrate His birth,  
And if the game of give and take  
Would seem to Him a thing of worth."

So spoke my friend and what she said  
So honest was it made me grieve;  
How true that on the Lord's birthday  
So many give but to receive,  
Or with what little thought of Him  
We wrap our gifts in tissues gay  
And dash off greetings breathlessly  
In honor of the Christmas day.

Yet, as I mused, and thought of Him,  
His gentle face before me rose—  
So strong, compassionate and sweet,  
So Godlike in its great repose  
And to my waiting friend I said  
"No doubt He would each weakness see,  
Each subterfuge, each selfish thought  
Beneath our Christmas sophistry,  
And yet, because He is the Christ,  
I think, with vision clear and true,  
He'd understand us and forgive,  
Because He once was human too!"

—Lida Keck-Wiggins.

— o —

ONCE more, dear Blue Kitchen readers, we have come to the end or nearly to the end of another year. Honey Lady has thoroughly enjoyed her work in Blue Kitchen, her experiments in that homey little lab with the honey pots. She has enjoyed also sharing with American Bee Journal readers such little experiences as it seemed might be passed along to them appropriately, and what blessing is **not** proper to divide with another! Many of you have made Honey Lady happy by writing in to the offices kind words about her efforts; some of you have found a little fault (and constructive criticism is a thing also to be welcomed by those who truly wish to do their best in any field); and now Honey Lady wants to thank you each and all, to say she hopes Blue Kitchen readers will from time to time send in a favorite, "tried and true" honey recipe, or suggestion, as to the uses of the nectar of the flowers, so that what means much to them may prove of benefit also to others.

And, of course, Honey Lady wants to say to you all "A Merry, Merry Christmas." And, as Tiny Tim remarked in the immortal Christmas Carol, "God Bless you, one and all."

The honey used in the Blue Kitchen is furnished for the good of the cause, by the New York State Federation of Beekeepers' Societies.

Honey Lady, (like all the members of all the Protestant women's missionary societies in America are, or **could** be) is studying Japan this year. There are a thousand interesting things to learn about the people of that wonderful island domain, but the one Honey Lady wants to pass along in this department is, that practical women missionaries are teaching the wives and mothers of Japan how to prepare articles of food which will supplement the too-much-rice diet, and one of the most prominently mentioned of these health foods is our old friend the honey!

— o —

Girl Blue Kitchen readers will be interested in a little "ad" Honey Lady found in a newspaper today. It concerns a shop which sets down that it has "Natural Syrup Products" for sale, and those it mentions are maple syrup, maple sugar, maple cream and **honey!** The trade-marks are a beehive (the thimble shaped kind) with bees flying artistically around it, and a maple leaf in the opposite corner. This ad struck Honey Lady very favorably as a thing to tell the girls about, and to suggest that such a shop might bring in good returns in your town and in **yours**. One might add bins of nuts such as she has right on the "place," also a few beautifully polished red or yellow apples, a section of homemade jellies, preserves, etc., ad infinitum, or she could just stick to the "Natural Syrup Products" idea, and if she has followed the recipes given in Blue Kitchen alone for making fancy things from honey she could add several honey-syrup products to the three or four from maple sugar. As it will lack several, (three or four) weeks until Christmas Day when this reaches Bee Journal readers, it might "pay" some church society in which there are beekeepers enough and maple tree owners' wives enough, to set up a shop for the benefit of the church. Or, instead of a bazaar for all fancy articles, have a Natural Syrup Products bazaar for one night, adding daintily put-up maple candies, jars of maple syrup, fancy jars of honey, attractively boxed honey candies!

Since the bee is distinctly a gift from God why not give back to Him at Christmas some of the benefits obtained from the work of the busy bee who knew how to make her product just as well when she was preserved in Noah's ark as she does today!

— o —

Speaking of honey candies, ye editor is giving her readers today a recipe for honey bittersweets, very gladly acknowledging that she obtained it from a most delightful brochure called "Honey Way Menus" with recipes and gotten out by Mrs. Jensen's Honey Tea Room.

As this recipe has been proved by Honey Lady to work out delightfully she passes it along not only as a suggestion for the Christmas shop, but for **any** time one wants delicious health candy made the honey way.

### Honey Bittersweets

"Let section of comb honey remain in refrigerator about 24 hours before using for coating. Then dip the knife, to be used for cutting, in boiling water. Cut comb honey into pieces about  $\frac{3}{4}$  of an inch long and  $\frac{3}{8}$  inch wide. Place pieces on trays covered with waxed paper and chill for thirty minutes before coating. Be sure dipping chocolate is proper temperature; then coat honey pieces just as coating cream centers. Drop a walnut, pecan, or almond on each piece. It requires continual coating to be able to turn out honied bittersweets that do not develop honey leaks."

— o —

Sometimes during the busy weeks preceding Christmas day, the housewife finds herself very glad to know of simple ways in the cooking. This is especially true of desserts. Therefore, Honey Lady, begs to suggest that other hard-put-to-it cooks do this some busy day:

Open a can of halved peaches. Divide up contents so as to give each eater a goodly portion. Then if you happen to **have** a small can of shredded or crushed pineapple, fill the natural cup of the peach halves with pineapple. Sweeten all by pouring over it a generous supply of delicately flavored honey. If **your** family likes it as well as hers did, Honey Lady will surely be glad.

Peaches could be filled with banana or most any other kind of fruit one happened to have on hand. However the pineapple combination is indeed delicious.

— o —

For a "change" in the youngsters' school lunch basket why not put in a few nut-honey sandwiches? You make them by grinding up nut meats. Hickory nuts are fine for it, mixing with strained, or better still, crystallized honey, and spreading it on the bread. Makes a nice little relish for jaded palates.

Honey Lady saw something quite attractive in a show window during Honey Week, i. e. small, squat jars of strained honey with a square of honey-in-the-comb in the jar. The mouths were wide enough of course to admit this solid square, and the effect was extremely pretty. Such a jar would make a nice Xmas gift.

Some delicatessen stores are offering honey which has been put up in beautiful jars which can be used decoratively later in a home. Does this suggest anything to you young bee-girls who have to give a lot of gifts each year, or who would like to do something to make some extra money? Yes? Good!

— o —

Here are a few hints about making honey icings for cakes for which Honey Lady gives credit to the American Honey Producers' League's booklet "Honey, When and How to Use It."

"Boil together one cup of granulated sugar with one cup of water until the sugar is dissolved, then add  $\frac{1}{4}$  cupful of honey and cook, without stirring, until the mixture registers 248 degrees Fahrenheit, or until a spoonful of the syrup dropped into cold water will form a soft ball. Pour over the stiffly beaten white of one egg. This icing can be made a month in advance and will keep soft, and after spreading over the cake will retain its softness for six months or more. . . . If desired to be used immediately the syrup should be cooked for a longer time, almost to the hard ball stage.

"Note: Be careful in cooking a honey-syrup, it is apt to boil over."

What appealed to Honey Lady about this recipe, and which will no doubt appeal to all you busy housewives who find it very convenient to have an extra home baked cake on hand around holiday times, was the fact that this icing keeps indefinitely and also that its use on the cakes keeps them soft and fresh for so long a time!

— o —

Merry Christmas!

## National Convention

(Continued from page 527)

best possible time at the lowest cost in true southern hospitality.

Valdosta is in the center of the beekeeping industry in the Southeast and has a climate in December and early January comparable with Los Angeles and the Indian summer months of the North. There are paved federal highways north, east, south and west. The city has three better class hotels, eight rooming hotels, a large number of rooming houses catering to tourist travel, two high class tourist camps with 40 cottages, heat, hot and cold water, baths

and all conveniences, restaurants, and ample parking spaces.

For the big annual sociable, the Chamber of Commerce has provided, in a large, well lighted, clean and comfortable building 150x200 feet, a barbecue and Brunswick stew with coffee and all accessories with full entertainment including the wonderful negro chorus of a hundred voices which will be heard in spirituals and other melodies. All organizations have unanimously voted to fulfill every promise and provide everything to make the visit profitable and enjoyable and unique in many particulars.

Valdosta is right by the Florida line, not far from Jacksonville and if you have ever planned to go south for the winter, now is the time to do so.

## Idaho Saves on Freight Rates

Idaho honey producers will save between \$250,000 and \$300,000 in honey shipment charges because the Idaho Public Utilities Commission protested against excessive rates and was sustained by the Interstate Commerce Commission in October. An order was received at the Public Utilities Commission Office restraining the railroads from putting into effect an increase in the rates on honey.

Honey used to have a bad reputation because years ago it was shipped in glass front cases and breakage and spoilage was much greater than now. Because of modern shipping improvements, the rates are lowered.

Glen Perrins,  
Utah.

## Conditions in British Columbia

According to reports from the provincial apiarist, it is estimated that the British Columbia crop will be increased 25 per cent this year. 25,000 colonies of bees are now registered in the province. Conditions were unusually good, willow and dandelion being generous. Fruit and irrigated alfalfa excellent especially in Okanagan and Kootenays. In the latter two districts, colonies have averaged over 150 pounds of honey per hive.

In the Chilliwack area, the production has not been so good. Production was excellent in the Fraser Valley. Alsike clover has become a dependent honey plant, while sweet clover, especially in the Sumas area, is good. Crimson clover in its second bloom has flower heads short enough for the bees to reach the nectar. Fireweed is also plentiful. Some colonies showed 200 pounds each. The fire-

weed districts and low valleys of Vancouver Island report excellent crops.

In the future it is expected that dumping will be more orderly in British Columbia now that grading regulations are coming into force. The home product will not be so penalized in prices as it has been.

F. H. Fullerton,  
British Columbia.

## Honey and Calcium

This is the title of a Question and Answer in the Los Angeles Times Sunday section sent in by Mr. G. J. Fifield, California. This is in the "Care of the Body" department, by Dr. Lovell. The question is asked—Is honey a calcium robber?

Dr. Lovell answers: "The reason sugar robs the system of calcium is not because it is sweet but because of the fact that it contains no vitamins or mineral substances. It has been so thoroughly refined, there is scarcely a vestige of its original source. It is a producer of acidosis. To overcome this the blood must furnish calcium oxides and calcium carbonates. It is this attempt at neutralization which forces the teeth to decay.

"On the other hand, honey is a natural food. When taken into the system, it neither robs the blood stream nor forces the body to decalcify. It is unfortunate that the average housewife does not use honey in her cooking and baking. It is simply that most of us are in the rut of least resistance, adjusting ourselves to that which our mothers, grandmothers and great grandmothers have done from time immemorial.

"If she thought a little about the problem, the average housewife would buy her honey in five-gallon lots. She would find that sweetening value for sweetening value, it's cheaper than sugar in spite of the cost. It will go twice as far as sugar. If we trained our children to use it, we would not have as great a dental problem, our acidosis would be materially improved and the universal problems of digestion and catarrh would be brought down to a minimum."

## Who Can Say?

What is the record for continuous existence of a colony of bees in the same hive? By this is meant the occupancy of a hive by an original colony and the descendants of the original queen, without requeening, without the winter loss of the colony, or without any break in continuous tenancy. Probably some old skep would hold the record, but it would be interesting to know what keepers of bees in movable-frame hives can contribute to such a discussion.

S. F. Haxton,  
Pennsylvania.



DR. LLOYD E. HERSHEY

# Honey Sweetening for Good Health

## *How a Doctor Uses Honey in His Diet Kitchen*

By John B. Aitchison,  
Pennsylvania.

Eat Thou Honey Because It Is Good,  
and the Honey Comb Which Is Sweet,  
to Thy Taste.

ON a ridge of the Welsh Mountains, between the great Chester and Lancaster County valleys, Pennsylvania state highway routes number 5 and 42 intersect as Main and Conestoga Streets to mark the quaint old village of Honey Brook.

Apropos as it may seem, the charming title, Honey Brook, holds no traditional relationship to either honey or to a brook; but is a perversion of the name transplanted from Wales by the early settlers—Nantmell; literally, "sweet water."

Today, however, the name Honey Brook bears a new significance, for it is here, amid the peaceful quiet of a rural atmosphere, that Dr. Lloyd E. Hershey, brilliant young Harrisburg, Pa., physician has chosen to establish his sanitarium in which to pioneer a new idea in the treatment of disease.

Prominent in the Hershey system of treatment is a recognition of the importance of dietetics, and conspicuous in the food served at the Hershey Sanitarium, is honey. Honey is used not only on the tables of the institution's dining room but replaces white sugar in every phase of cooking and food preparation.

Visitors to the high-gabled, green-stone mansion on shady East Main Street are often fortunate enough to be conducted through its spacious rooms personally by the master himself, Dr. Hershey. Graduated in Medicine at the Philadelphia College of Osteopathy, he has been interested in the science of nutrition for many years. Nothing gives him greater pleasure than to stop for a moment in the light, airy kitchen and explain to his guests how different articles of food are prepared with honey.

"I have found in my practice," Dr. Hershey states with conviction, "that honey is far superior as a food to any other form of sweetening. The refined sugars used in the average household, white sugar and glucose syrups, are artificially extracted and separated from the organic minerals necessary for the building of tissues and bones, and for the normal functioning of the entire body. Even so-called brown sugar,—most people do not know this—is a very highly refined product unsuited to the needs of the human body. The extensive use of such sweets, and of the various forms of pastry and confectionery in

which they are ingredients, is today responsible for a large number of diseases of the digestive organs.

"Honey, on the other hand, contains the calcium and iron and other vital elements necessary to build and to maintain healthy teeth and bones, and in addition, it is composed largely of two very easily digested sugars which are assimilated directly into the blood stream with very little effort on the part of the body.

"Such common foods as tea and coffee, for instance, while I do not recommend them, are far better with a teaspoon or two of honey added than when sugar-sweetened.

"But speaking of drinks," the doctor turns to a 10-quart mixing and beating machine in one corner of the kitchen, "there is where we make the healthful drink—honey milk shakes!

"I consider clean, raw milk a very desirable food for most people, and my dietitian has worked out many palatable ways of serving it. We frequently serve as a complete meal, for instance, a fresh fruit salad with two or three glasses of chocolate milk shake; or possibly a vegetable salad with a banana milk shake. Either of these combinations makes a very delightful hot weather meal, and yet supplies the body with ample nourishment for all its needs."

In view of the doctor's disregard for refined sugars one might wonder how milk shakes can be made without ice cream, which most assuredly contains quantities of white sugar. Here is the recipe his dietitian gives:

**Banana Milk Shake**—Crush 3 ripe bananas, or work them through a fine colander or sieve; add 2½ ounces (5 tablespoons) of honey and 1 quart of milk. Whip with beater or shake



Jackie McClure Hershey, a real honey baby, 14 months old.



vigorously in a closed jar. Serve immediately, adding a little cracked ice if necessary to keep cold.

**Chocolate Milk Shake**—3 cups milk, 1 cup heavy cream, 1 egg,  $3\frac{1}{2}$  to 4 ounces (7 or 8 tablespoons) Honey-Chocolate Syrup (see recipe below). Combine ingredients cold and whip or shake until a heavy froth develops on top. Serve as above.

**Honey Chocolate Syrup**—this product is comparable to the chocolate syrups used at soda fountains, but is far more healthful, as the latter consist largely of cane sugar and water, plus genuine or, frequently, artificial flavoring. To  $\frac{1}{4}$  cup of cocoa, add  $\frac{1}{2}$  cup hot water and stir until dissolved. Add 1 cup honey that has been warmed,  $\frac{1}{2}$  teaspoon salt, and 1 teaspoon of vanilla extract. Cook the ingredients together slowly for about five minutes, stirring constantly. The syrup may be placed in a glass jar for ready use. It will keep indefinitely but should be shaken each time before using. Aside from its use in preparing milk shakes, it makes an excellent topping for ice cream sundies or wherever a chocolate flavoring is desired.

A light-flavored honey is in use at the sanitarium. "We find that only about 50% of our patients actually like the flavor of honey in food," says Dr. Hershey. "The balance prefer the taste, or I should say, the 'tastelessness,' of sugar, and object to the honey-aroma when it is at all pronounced. We have found, however, that by buying only the very light-flavored varieties its presence is never objected to."

Honey-butter, a mixture of dairy butter with granulated honey, is used regularly at the Hershey Sanitarium as a spread and replaces sugar syrups on waffles. A similar mixture of granulated honey with peanut butter makes another splendid spread and is recommended with sliced cucumbers and lettuce as a filling for whole-wheat bread sandwiches. These sandwiches, together with one or two cooked vegetables, form an adequate meal, according to Dr. Hershey's teachings, and if used in place of the conventional meat-potato-bread-heavy dessert diets will improve the health standard of anyone.

"We view the body as a perfect machine," Dr. Hershey explains. "The bones, muscles, tendons, ligaments, joints, blood vessels and nerves go to form the structure of the machine. The food and drink taken into the body serve as fuel and the mind as the engineer. We can't run a machine efficiently with a wheel broken or out of line. We can't use low-grade kerosene in an engine that requires highly-refined gasoline; and even though we have perfect structure and perfect fuel, the machine is useless in the hands of a drunken engineer or driver.

"So our way is to find the cause

of the individual's sickness, whether it is structural, or chemical (food intake) or psychical (mind). When we find it we correct the person's habits and rearrange his living schedule, and nature does the curing."

Two of the doctor's most loyal supporters are Phyllis Marie, age three and one-half, and Jackie McClure, fourteen months, the Hershey children—both of whom exhibit remarkable health. Both were weaned on raw milk, modified with honey and water, which—with small quantities of fruit and vegetable juices—should form the complete infant diet up to two years or longer. On such a regime he has demonstrated that growth is rapid and that great vitality and resistance to disease is certain.

"There is no reason," Dr. Hershey will remark with a gleam of pardonable pride in his eye, "why these youngsters of mine, or those of any other intelligent parent who will feed them properly, should ever know what disease is!"

## A Book of Vines

"A Little Book of Climbing Plants" is the title of a book by Alfred C. Hottes which lately came to the editorial desk. There are many honey plants among the vines and this little book, which is bigger than its title indicates, has been read with more than usual interest.

It is amazing what can be done with vines, and few gardeners realize what a great variety there are available. Vines serve so many purposes that they should be used to a far greater extent than they are. Fences can be covered with them, porches may be shaded, unsightly spots can be hidden, and unusual enjoyment can be secured from them. It seems that there is a vine for every purpose. For fruit nothing can exceed the grape in yield from a limited area. For flowers the silver lace vine or clematis, any one of a hundred others offers unlimited choice. For the bees the matrimony vine, Virginia creeper and several others yield nectar freely. For Florida and the South the pink vine will yield as much or more honey than anything which can be suggested.

One would hardly dream of so much information regarding vines as is crowded between the covers of this book; vines for sun and vines for shade, vines for the cold North and the sunny South, annual vines and those which live for a century. Altogether 250 pages freely illustrated are devoted to a most thorough discussion of the subject. One with a small plot of ground can find numberless suggestions for adding to the variety and interest of his surroundings. The price is \$2.00 and the publisher A. T. DeLaMare Company of New York.

## Holiday Honey

By C. M. Litteljohn,  
Washington.

Christmas cheer with a pot of special honey—a blend perhaps from rare pastures or distilled from distant fields—honey that reminds one of home and of forgotten meadows and gardens of childhood, even if in foreign lands. This may be Holiday Honey at its best. Indeed, placed in little pots and wrapped in Christmas atmosphere, there is nothing half so fine for a Christmas present as honey.

And since honey is capable of a thousand-and-one appeals, an interminable number of blends from Maine to Madagascar, as different as the geography and climate of the earth whose subtle chemistry combines to produce seasonal change and diverse flora for strange and delightful bee nectars, holiday honey may be of infinite variety.

Of course, the wrapping, or Christmas aura, makes the best of Christmas presents more attractive and alluring. The honey pot or artistic jug enveloped in appropriate papers designed for the Yuletide, and tied with colorful ribbons of varied hues, is an almost irresistible present. Receipt of the honey, moreover, may have far-reaching effect on those previously neglecting this product, but who may find most astonishing the undreamed of benefits that accrue from Christmas honey, or duly emanate from that Christmas honey pot presented by a wise friend.

Some of the shops take an initiative and leadership in this direction that may well be more generally emulated in featuring "Holiday Honey." Among the Christmas specials for instance, of one of the little stores of a Puget Sound community last year, which makes a specialty of "Honey for Health," there were raw sugar and honey candies, honey fruit bars, and the offering of orange blossom honey in five-pound lots. The latter made a most acceptable and worthy Christmas present for many, young and old, sick or well—especially for the sick, since it, of course, works wonders towards re-establishing their health.

Consumers cannot be told too often in advance of the gift giving festival, or as a last minute reminder in the throes of Christmas shopping, that honey represents one of the very finest Christmas gifts that friend can make to friend—while honey customers made at the Yuletide season may stick throughout the year to come—and thereafter.

# The Style in Advertising

By Robert M. Mead,  
Vermont.

**T**HERE are as many styles of advertising as there are of ladies dresses, only the ads, in some instances, cover more ground. There are ads to entice you into buying, there are ads to scare you into buying and the more gentle ads that merely advise you where you can buy if you happen to feel like it. Advertising is one of the largest forms of business in the United States. It makes possible the radio, the daily press, your favorite magazine and some not so well liked—things like the huge sign boards that desecrate our scenery at frequent intervals.

Everything is advertised. Well, anyway, nearly everything, even the things that dare not be advertised in

print are advertised by word of mouth so you might as well say that advertising draws the line at nothing. The ads may advise you on one page to use a certain kind of breakfast food and on the next the necessity of some lotion for feminine hygiene. Everything goes from oranges to toilet paper, not necessarily in a subdued manner either.

There is advertising that honestly intends to educate. It hopes of course by such education to sell more of some certain product but nevertheless its educational matter can be read profitably and accepted as fact. **The literature put out on the uses of honey may come under this heading,** or in some instances under the head-

ing of advertising that is supposed to create a demand by creating a desire.

If you read many of the better class magazines you have doubtless noticed the ads written by Bruce Barton that are intended to educate people as to the futility and hopelessness of settling things by war. They do not merely state that we should not go to war or try to scare us into evading war on a basis of personal safety but rather make their appeal to the intelligence of a thinking people. They are attention getting ads, they are readable, they present dramatic facts in a thought provoking manner, in short do what they are intended to do, make people snap out of their day dreams and think.

Honey advertisements and honey propaganda should be done in a similar manner. We are not all Bruce Bartons when it comes to writing advertisements but most of us can, with a little study, pep up our local advertising. Plan it so that it supports and dramatizes the work done by the Honey Institute. Make it thought provoking if possible so as to jar the reader out of his apathy into awakening interest.

There are two types of ads that will have little application to the honey business yet they are in such common use that it is well to comment on them. One is the scare type of advertising. It has always been in use by the insurance companies. Remember that reassuring phrase that appears on calendars and in ads wherever one may look, "Tomorrow may be too late." Other things sold by the scare method are auto tires, first aid kits, safety glass, mouth washes and antiseptics. These ads often depend on much overdrawn horror scenes for their attention getting feature. They may have a limited appeal to a certain class of people but many of them seem a waste of time and money. The other type is the "use it because some famous person uses it" style of advertising. Very familiar to all readers because accompanied by photos and favorable statements of some celebrity. Both these types of advertisements are often little more than insults to a supposedly well educated and intelligent public.

The type of advertising that many small beekeepers will have occasion to use is the type that merely advises where a product may be bought and perhaps the price at which it may be

## RAISE THEM

on




*Children*  
love it with cereals

<p>Use it with</p> <p><b>PANCAKE FLOUR</b> <small>AUNT JEMIMA</small></p> <p><b>CORN FLAKES</b> <small>KELLOGG'S</small></p> <p><b>QUAKER OATS</b></p>	<p><b>WHEATENA</b></p> <p><b>CREAM OF WHEAT</b></p> <p><b>Cakes - Candies - Sauces</b></p>
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**THE COMPLETE FOOD-SWEET**

**IN GLASS OR TINS**  
**PURE - MILD**  
**Champlain Valley Product**




The Crane poster still remains a classic of the beekeeper's own advertising.



A good market display like this one in the Seattle market is essential to honey movement.

bought. The main thing in such ads is to use reasonable brevity, clearly state the price and quality so that the reader can know the necessary details with a minimum of bother. From a little experience in advertising poultry products I believe it is usually advisable to state the price asked right in the ad. Such ads bring sales at once where the other type at first, bring only inquiries. In making or buying a sign to use beside the house or roadside stand make sure that it is brief and extremely easy to read. Modern motor cars traveling at high speed do not give the driver opportunity to read anything but a few words in one spot and those must be easy to see.

Last but not least, when looking over the ads in your favorite magazine, give a little attention to their make-up, what they have to say and

how they say it and whether the whole thing impresses you favorably or leaves you with the impression of having digested a lot of high powered apple sauce. Intelligently studying the ads of the large companies of national importance, can give you ideas for your own advertising.

## Bulletin on Honey Uses

The Canadian Department of Agriculture at Ottawa has recently issued a new bulletin entitled, "Honey and Some of the Ways It May Be Used." It is by C. B. Gooderham, Dominion Apiarist and M. L. Heeney, Specialist in Cooking. The publication contains a varied selection of breads, rolls, cakes, cookies, pies, and numerous other foods in which honey can be used successfully.

## Old Chip's Pancakes

Chips is an old ship's carpenter, a very interesting character, whom *Better Homes and Gardens Magazine* presents in articles quite frequently. He has traded recipes all over the globe and knows just how to use honey properly which speaks well for his good judgment.

Of cooking he has this to say, "Cooking is just like building a home. The finished product should be suited to your purse, good to look at, and lived with with no regrets." His pancakes truly carry out his theory to the highest degree. The twelfth one is just as good as the first and they leave no after-regrets.

The recipe for these delicious pancakes, Chips secured in France, a country famed for its delightful cooking. In exchange for this recipe he showed the innkeeper how to put together the regular he-man sour-dough flapjacks the cooks in the Michigan lumber camps used to make. Later he saw them on the menu as *Pattes de Jacques*. What's in a name!

For these French pancakes you will need:

- 1 medium-sized potato
- 4 eggs
- $\frac{3}{4}$  cup flour
- Milk
- Potato water
- 1 cup honey
- 4 tablespoons melted butter
- $\frac{1}{4}$  teaspoon cinnamon
- Dash of nutmeg

Pare, slice and cook the potato. Put through a sieve. Allow to cool. Add  $\frac{3}{4}$  cup of flour and  $\frac{1}{4}$  teaspoon of salt. Mix well. Separate the eggs and beat the egg whites until very stiff. Beat the egg yolks with an equal amount of potato water and sufficient milk to make  $1\frac{1}{4}$  cups of liquid. Add to potato paste and flour mixture. Rub, do not beat the lumps out. The batter should be the consistency of whipping cream. Fold in the egg whites. Bake on a hot griddle.

While the griddle is heating, warm one cup of honey slightly and stir into it, 4 tablespoons of melted butter,  $\frac{1}{4}$  teaspoon of cinnamon and a dash of nutmeg. Blend ingredients well. Serve on piping hot pancakes.

Benj. Nielsen,  
Nebraska.

## A Daies Work

The word Bee is originally Dutch, and so composed because it affords us many things: wax for the curing of doleours, wounds, ulcers; for lights, ceare-cloath, and many other things. And as for Hony it would require a daies work to declare the benefits thereof.—Culled from an early writer.

W. H. Hull,  
Virginia.

PLEASURE AND PROFIT!

Leads all states with an average of \$32.50 Honey per line.

The Honey is Heavy Bodied and High in Quality.

### HONEY FACTS

OF

### North Dakota

HONEY AND HEALTH—  
Feature the State.

A PRIZE WINNING HONEY-FED BABY!

HATI OFF TO SWEET CLOVER!

500,000 Acres of Sweet Clover Bloom provide in abundance of nectar.

Long Sunlit days and Cool nights favor maximum nectar secretion.

Facts about honey always tell an interesting story. This one as put up by Munro of North Dakota at the World's Fair.





By G. H. Cale

**N**OW for a report of the success in acceptance of the queens introduced October 18, mentioned last month. We examined for acceptance October 26. Every queen introduced was accepted perfectly. October 26 was a bright clear day but no robbing because it was too cool for that. Queens were also introduced on Sunday, November 4, and on Wednesday, November 7. A report will be given of these later. We may not look at them again until spring. It depends on the weather.

This introduction has taken place during the broodless period. Colonies are entirely without brood or with only a small number of sealed cells with bees emerging from them. However, it is not so cold that bees are tightly clustered as in winter. The clusters, if any, are loose and not compactly formed as they would be in colder weather. There is no difficulty in taking out combs from the center where the queens are usually found.

Small clusters with no brood whatsoever and with exceptionally small queens are those that will do to requeen by this method. It is more easy to tell poor queens now than during a flow. Sometimes when queens are laying under the impulse of a honeyflow, the poor are not easily told from the good. It seems to be easy, however, during this broodless period.

**Keep in mind that this is not the winter period when bees are tightly clustered but the fall broodless period before winter comes.** Do not order queens expecting to introduce them after the winter period has started. The chances are you will lose the queens in shipment. We do not plan to use this method any more this year. At this writing it is November 16th, too late to do any more.

In October, I reported Caucasian colonies requeened with Italian stock that disclosed on later examination, after acceptance showed eggs and brood, the presence of a Caucasian queen instead of an Italian. My guess was that there was a mother and a daughter in the same hive during requeening and the mother was killed, the daughter was left. That the bees did not accept the Italian.

Mrs. P. M. Williams, Alabama, says "My guess is that the Caucasian bees did not cut down all the queen cells

that they started after their queen was killed and after the Italian had been introduced and accepted. One of the queen cells hatched and this Caucasian daughter killed the Italian queen heavy with eggs. I have seen this many times. The remedy is to look all the combs over carefully for cells even though the queen which has been introduced has been accepted and is laying freely."

Well, maybe you're right, Mrs. Williams. Let's do that hereafter.

— o —

The use of the top entrance interests me. This year we will try a few colonies with top entrance and packing here. Usually we use little or no packing. Just something at the top to offer a little protection and a reduced entrance. Sheltered locations are essential. Good queens, strong colonies, plenty of food. Just how far north this would be good practice is a question. Probably it is determined by the winter flight. When bees in the average winter are confined without flight for periods of six to eight weeks with weather so cold that the cluster cannot change its position, packing, as well as shelter and good colonies, becomes necessary.

— o —

I have been reading over some of the back pages of this department. On January 19 last year the sun was smiling on the state of Illinois and the bees in good flight. There had been constant flight from the first of November up until that date. This year starts out the same way. Too much bright, warm weather for October to suit me. I would like to see snow and rain. The wise men say we are in for another dry year. Perhaps it won't be quite as dry as this last one. Let's hope not.

— o —

Back in the February number, I note a compliment coming from our correspondent, Observer. How many know who the Observer is? None other than E. L. Sechrist, formerly in the government service, in charge of the Pacific Coast Laboratory, now a beekeeper and queen breeder on the Island of Tahiti off the coast of New Zealand in the French Society Islands. You will note his advertisement in this issue for a new strain of bees. We wish him well and good luck. It would be fine to visit him, wouldn't it? Way down there in the Southern Hemisphere!

These bees he offers interest us. Back in the June page I said: "After all is said and done, having tried Carniolans, Caucasians, Golden Italians, hybrids and blacks, I have about come to the conclusion that the three-banded bees are as good as any. Personally I like bees not too far removed from the native Italian importations. The Italian bee as it comes from Italy is more like the Caucasian but does not have its bad habits of excessive propolization."

In writing of these bees of the Tahiti, Sechrist says "They were imported in 1869 from Italy and have three bands. I was surprised to find the drones uniformly black with narrow bronzy yellow bands. They are more gentle than the American Italians and even in this winter season (September) when almost no nectar is coming in, I see no tendency for the bees to rob. It seems to me, with controlled insemination pretty well on the way, with this old basic Italian stock, we could breed up a pretty good strain of bees, breeding for quality rather than color."

— o —

Our plan of marking queens with Duco Household Enamel in different colors, according to the year, one color for a year, is showing up many things beautifully. Some queens last several years. Other queens are superseded or replaced the same year. A few colonies have queens in since 1931 and yet we judge them to be so good that we have not replaced them. Also a few colonies have queens that have been replaced two and three times this current year. What do you know about that?

## Hives of China

(Continued from page 535)

Modern hives are now coming into southern China and with them the more efficient Italian bees while improved methods of beekeeping are now being taught in several of the Mission and Government schools. Without doubt modern hives and improved methods of beekeeping will produce better results in a commercial way and should be encouraged as much as possible, but one somehow feels a distinct loss when the old-fashioned but picturesque customs or handicrafts whose fascination and charm do so much towards making China distinctive and interesting give way to standardized, commonplace, though perhaps, more efficient, ones.

## "Apicoltura"

"Apicoltura" is the title of a small Italian book, by C. Canestrini and V. Asprea, in its thirteenth edition. It is a very compact volume, 4¼x6¼ inches with 135 pages, 136 illustrations and three tables. It is a true progress worker.

## THE EDITOR'S ANSWERS

When stamp is enclosed, the editor will answer questions by mail. Since we have far more questions than we can print in the space available, several months sometimes elapse before answers appear.

### LOCATIONS IN ILLINOIS

1. When does the main honeyflow begin and about how long does it last here in Southeastern Illinois? I am located in Edwards County.
2. Is Spanish needles a honey producing plant or does it mostly produce pollen?
3. Is it necessary that water be provided for bees in the summer time during the hottest weather?
4. How late can a swarm be hived and expect them to gather enough honey to winter on?

Answer.—1. The honeyflow usually begins early in June and lasts till about July 10. This season it has been delayed by rains. There is another honeyflow in parts of Illinois, during August-September.

2. Spanish needles produce honey in some localities. They do around here.

3. Yes, bees need water whenever they rear brood. But they are usually able to secure it. If there is none close at hand, it is best to supply a watering trough with some light wood floating on the surface, or water running through some grass.

4. "A swarm in May is worth a load of hay;

A swarm in June is worth a silver spoon;

But a swarm in July is hardly worth a fly."

That is still true. But occasionally we see swarms in August and even in September that harvest enough for winter. It depends much on the season.

### CLEANING EXTRACTOR—GRANULATED HONEY IN COMBS

(1) I have a honey extractor that may have had a few combs of foulbrood honey put through it. What would be the best way to clean it?

(2) Last summer I had some trouble getting the bees to get the sugared honey out of the combs. Could I do anything to help?

COLORADO.

Answer.—(1) Washing the extractor thoroughly with boiling water half a dozen times in succession ought to cleanse it so that there will be no danger of transmitting anything.

(2) Granulated honey in combs is usually cleaned out by the bees, without difficulty. But if they do not clean it all out, try spraying the remaining honey with a little water and returning the combs to them. The moisture usually dissolves the remaining crystallized, or as you call it "sugared" honey, so that they can remove it.

### THREE BANDED, GOLDEN OR LEATHER COLOR?

I write you for a little information concerning the Italian bees. Which are considered the best race, the three banded, golden or leather colored? I have heard this argued pro and con by different bee men but have never seen anything in the bee journals on this subject. I have 400 hives of a "duke's mixture," golden leather color and blacks. I want to cull and queen this fall. I am going in the bee business on a more extensive scale and I want the best bees and equipment.

ARIZONA.

Answer.—The "Golden" Italian bees are simply bees that have been selected among the ordinary run of Italian bees, for their bright color, regardless of other qualities.

For that reason, they are usually less active than the three banded leather colored.

But you might be able to find some very good honey producers among your 400 colonies. The thing to do is to breed from the best honey producers, although we prefer to breed from a pure race rather than from hybrids, as the pure bees are more regular in their progeny. But the "Goldens" are not any purer than the three banded.

### TWO BODIES FOR BROOD—WINTER PROTECTION

I use a hive which can be tiered up to any height on the American style, but with British standard size frame. The super or brood box holds 11 frames and has a double wall on two sides, with dead-air space. The 11 frames are about equal in comb area to 9 Langstroth frames.

(1) Are two stories (22 frames) enough or too much for a good American-Italian queen in the busy season?

(2) Where two stories are used on the food chamber plan it is sometimes suggested to put the food chamber under the brood chamber to encourage the bees to use up the honey belt and join up the two patches of brood. Would it be good practice to keep exchanging these stories every fortnight as a form of brood spreading? Would this prevent swarming, would it damage the "morale," or would it be too large a brood nest after the heavy breeding season? The late honeyflow is poor here.

(3) Is straw a good winter pack placed vertically against the hive and tied in position, without tar paper cover, except a little at the top to prevent the rain from getting inside the straw? The arrangement is to leave the metal roof uncovered, and have a small strip of tarred felt to shed the water. There is an empty super filled with packing between the roof and the bees.

(4) In this arrangement the slightest touch on the metal roof disturbs the bees in the quiet season. Is this harmful when small birds alight on the roof?

(5) What is a reasonable percentage of swarms in a white clover district working for extracted honey and without cutting out queen cells?

IRELAND.

Answer.—(1) Two stories such as you describe would be more than ample for the brood of most queens. Some might fill them with brood but they would be the exception. However, better too much room for brood than not enough.

(2) What method to employ would suggest itself to you as you examined the colony during the season. Use your judgment as to how much shifting to do.

(3) The only objection to straw and the method you suggest is the danger of drawing mice and rats to the spot, which would cause more or less disturbance to the colonies. They should be kept quiet, hence the advisability of using material which will not draw mice.

(4) The answer to the previous questions is answer to this.

(5) The possible number of swarms is so irregular that I cannot reply to this with any positive certainty. Your location and other conditions have influence upon swarms also.

### HONEY VINEGAR

In the October issue of American Bee Journal, you told about making honey vinegar using water in which honey cappings had been washed.

I have some buckwheat honey and wonder if it would make good vinegar. How much should it be diluted and how much sweet cider should be added to it? How large a quantity of vinegar should be made in order to get a good product? Will soft water have to be used to dilute the honey used in making the vinegar?

MICHIGAN.

Answer.—Herewith find enclosed our usual bit of information for vinegar making. Your buckwheat honey will be all right to make vinegar. A little over a pound of honey to the gallon of water should be used. If you use too little it will make the vinegar too weak. If you use too much, it will leave it sweet for a long time. The quantity of fruit juice or cider to be added is of no importance, say about a fifth or a sixth. Use hard or soft water, as you please.

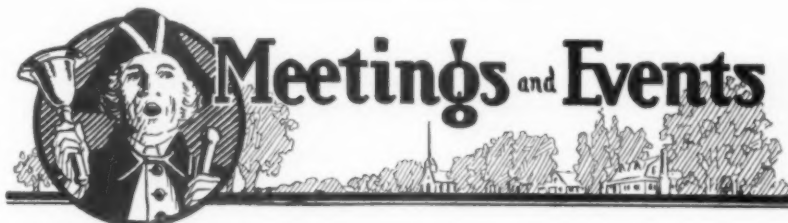
### CARBON DISULPHIDE FOR COMB HONEY

Please tell me if carbon disulphide can be used to keep the moths from comb honey? Will it affect the flavor of honey? I have a quantity of comb honey but the moths are so bad here they ruin some of it before I can sell it.

ARIZONA.

Answer.—I have never heard of carbon disulphide being a damage to honey. Of course it should be allowed to evaporate after doing its work.

It is very important to keep both your empty combs and your combs of honey in a room where moths cannot enter, after they have been taken away from the bees. The main reason for the numerous moths is that so many people leave combs where they can breed exposed in unprotected places. A honey room should be moth-proof. There is no danger of moths in a room where you can exclude flies, unless you carry in some combs containing the eggs or worms of the moth.



### Empire State Association Convention Syracuse, December 7th and 8th

The annual convention of our association will be held at the Mizpah Hotel, Syracuse, New York, on the 7th and 8th of December. The pro-

gram committee has arranged many interesting features and among the speakers we expect to have Jas. I. Hambleton, Senior Apiculturist at Washington, D. C.

E. T. Cary,  
Secretary-Treasurer.

# Louisiana Comb Shippers and Honey Producers' Association

An Independent Beekeepers' Organization—Neither Controlled Nor Affiliated  
With Any So-Called National or State Organization.

Organized by Straight Package Shippers for a Better Understanding With Package Buyers.

Since package bee shipping first started it has been an established fact that bees on natural combs of honey with the queen loose and laying among them, with brood in all stages, shipped better, handled and transferred better, get off to a better start and put up more honey than any other way in which bees can be handled.

It eliminates all trouble in installing in the hives, as the combs have only to be lifted over. Also, through a flight hole in the package, they can be loosed, let fly, and then settle down before transferring. It removes all danger of queen introduction practically all loss in transit and most of the trouble with supersedure.

It is ideal for orchard pollination since it can be opened and set under the trees. The extra honey it carries takes care of variation in bloom period. The laying queen demands pollen for which the heavy force of mature bees readily search among the fruit blossoms.

This section of Louisiana is ideal for comb building, with its heavy, long drawn out honeyflows and its mild climate. And every member of this Association is a honey producer. We keep bees to store honey not just to sell. Let us ship them to you as they come from our hives on their own combs to store honey for you.

We offer you this package at the price submitted to the Code and built on code two-pound package prices.

1-9 2-lb. Package with untest. queen, to June 1, \$2.65 ea.  
10-49 2-lb. Pack. with untest. queen, to June 1, \$2.55 ea.  
50-99 2-lb. Pack. with untest. queen, to June 1, \$2.45 ea.  
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All packages either on a comb of brood with honey and emerging bees or with straight can of sugar syrup, at the buyers option; with

flight hole bored and queen introduced to package or not at the buyer's choice. For each additional pound of bees or extra comb of brood add 75c. Two pounds of bees with two combs is the best buy.

One-fifth books order; balance due before shipping date. Prices f.o.b. shipping point. All packages with Inspection certificate attached. No disease in Louisiana. Thousands of colonies to draw from.

Inquire for combs built on Dadant's Wired Foundation and for packages on Modified Dadant combs.

Packages obtainable from following alphabetically listed names at the addresses given. Extra queens in season at Code prices. Safe delivery and satisfaction guaranteed.

R. I. BERNELL, Route 4, New Orleans, Louisiana.

E. J. BORDELON, 2651 Havana St., New Orleans, La.

JES DALTON, Kenner, Louisiana.

FRED E. EPARDT, Luling, Louisiana.

J. L. GASPARD, Hessmer, Louisiana.

WILLIE ROY, Hessmer, Louisiana.

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MOOSE ROY, Hessmer, Louisiana.

## Wisconsin State Association Report

With a program devoted to topics of an educational nature the 56th annual convention of the Wisconsin State Beekeepers' Association meeting at Green Bay, October 30 and 31, went on record as favoring the licensing of honey houses.

The subject was brought to a head following a talk by James Gwin, Madison, of the State Department of Agriculture and Markets, on the Wisconsin honey marketing program in which he asked the association to take action on the licensing of packers. While not attempting to persuade the delegates either way, he pointed to its revenue producing advantages which are said to be badly needed by the state department to continue the eradication of foulbrood.

Proponents of licensing argued it would not only produce more revenue but would serve as a check on the honey houses which are badly in need of inspection.

The convention was opened Tuesday morning with a short address by A. H. Seefeldt, Kewaskum, president, with other speakers including C. D. Adams, Madison, chief apiary inspector; F. R. Buchanan, Glendale, California; and Mrs. Malitta F. Jensen, of American Honey Institute.

Mr. Buchanan, operator of one of the largest apiaries in the country,

told the convention the most important things in beekeeping were the selection and care of queens and the systematic and effective operation of the apiaries. He warned against breaking up strong colonies to build up weak ones. Wisconsin bees, according to Mr. Buchanan, develop more rapidly in the shorter season than do California bees in their longer one.

Mrs. Jensen stressed the fact that the American Honey Institute is an educational and not a honey buying or selling organization. She pointed out as benefits to the producer, the Institute's work of serving the consumer by showing ways in which honey may be used in cooking, increasing the demand thereby. A honey demonstration, describing the use of honey in Christmas baking under Mrs. Jensen's direction, was the feature of the afternoon session.

At the annual banquet Tuesday evening, Carl D. Adams, Madison, was presented by Professor Wilson with a certificate in recognition of service to beekeepers in the state. Mr. Adams said he had worked with "the best people in the world" and they had made the many unpleasant tasks he had to do in his inspection work much easier.

Kenneth Hawkins, Watertown, presented a resume of conditions in the twenty-seven states he visited since

February. The western states, he reported to be in deplorable condition due to drought. Most of the other states were also affected although in lesser degree. He estimated that the total honey crop this year at 50 to 60 per cent below normal.

Both Mr. Hawkins and Professor Kelty, of Michigan, commended the beekeepers who refused to sell their honey at low market in an effort to bring the price level up.

E. L. Chambers, state entomologist, speaking Tuesday afternoon on American foulbrood control, declared that the lack of funds from taxes and state appropriation, have held back progress in this work and urged beekeepers to perfect their organizations so that the state association would be better prepared to request the appropriation of more money from the legislature.

Mr. Chambers explained the occupational tax levied on beekeepers of 25 cents for the first colony and ten cents for each additional one has not been collected yet as the first payment will appear on the next tax roll. Revenue from the collection should total about \$6,200 but this is not enough to carry on effective work against disease.

"If the service we are giving you is worth while, you must be willing to pay for it with a tax or by some other means," Mr. Chambers said. "With about 15,000 beekeepers in Wisconsin



sin and approximately 250,000 colonies and a million dollar business, it seems to me that beekeepers should be willing to pay to fight a disease which threatens the industry."

An interesting discussion and demonstration on the production of cut comb honey was given by Professor Kelty and James C. Hilbert, an apiarist of Traverse City, who has marketed this product for several years. Professor Kelty explained the experiments conducted in producing cut comb and bulk comb honey and said that its successful marketing indicated a future change in this direction in beekeeping. Mr. Hilbert reported that the small combs, cellophane wrapped, have a ready market in Chicago, mainly because of their unique appearance and sales appeal.

E. C. Alfonsus, of the University of Wisconsin, gave a comparison of lower Australian and Italian bees, with suggestions about queenrearing and bee diseases. Under the subject of "Cellar and Outdoor Wintering Requirements," Professor H. F. Wilson declared that numerous tests and experiences throughout the state have determined that bees with good honey stores, will survive cold and be stronger in the spring than colonies well protected but with insufficient stores.

Professor Kelty outlined organization work in Michigan, declaring that for the past several seasons the Michigan Association has decided also on a price for honey which has been maintained to the advantage of Michigan beekeepers. At the close of the session Wednesday, H. J. Rahmlow, corresponding secretary, urged stronger associations so that the present state membership of 245 can be increased.

The following officers were elected: August Wolkow, Hartford, President; Thomas Cashman, DePere, Vice-President; H. J. Rahmlow, Miss Arlene Weidenkopf, and V. G. Howard, re-elected Corresponding Secretary, Recording Secretary and Treasurer, respectively. A. L. Kleeber, of Reeds. The 1935 convention city was left to the decision of the executive committee, and Frank Greeler, of Neillsville, together with the other officers, form the new board of managers. mittee.

Wisconsin Trade News Bureau.

#### Rock Island County Meeting

The annual meeting of the Rock Island County Association was held at the home of Mr. and Mrs. John Mohr and Mike Mohr, September 27, with a potluck dinner to sixty members.

The following officers were elected: John Gasnow, Moline, President; Rev. C. K. Dean, of Cordova, Vice President; S. F. Peterson, Moline, Secretary; H. A. Wickersham, of Hampton Township, Treasurer. Directors—

Fred Hofer, of Taylor Ridge; Charles King, of Moline; and Clarence Schave, of Hampton Township.

C. L. Duax, Inspector for Illinois, spoke about disease. He said that the worst danger of contagion comes from allowing hives in which diseased bees have lived to lie around without being cleaned up. There were other speakers.

S. F. Peterson,  
Secretary.

#### Saskatchewan Beekeepers' Meeting

The twelfth annual meeting of the Saskatchewan Beekeepers' Association was held August 2, 1934, at the Hotel Kitchener, Regina, Saskatchewan, Canada. About 100 members of the total membership of over 750 were present.

Papers were given by W. E. Harrell of Hayneville, Alabama, package bee producer and president of the Southern Beekeepers' Conference; S. O. Hillerud, Provincial Apiarist of the Province of Alberta; Thos. Atchison, State Apiarist of Alabama. Hon. F. H. Auld, Deputy Minister of Agriculture for Saskatchewan was also present as luncheon speaker. Various matters of business were presented from time to time to the Association by R. M. Pugh, Provincial Apiarist of Saskatchewan.

The Association has made a winning fight to get the price of bee equipment in the Province down to what it feels is a reasonable figure. In doing this it did a co-operative business in bee equipment and supplies in 1933 of over \$3,700. Package bees from the southern United States have also been handled co-operatively and the 1933 business in these amounted to over \$9,400.

Largely due to the assistance and capable guidance of the Provincial Apiarist, Mr. R. M. Pugh, the Association has developed from a very small nucleus a few years ago to its present position of power and influence.

The Association last year began the development of an English market for honey with the shipment of 36,000 pounds of its finest sweet clover honey to London. This was shipped and sold in 60-pound cans and went by the far northern route through Hudson Bay. This honey was apparently well taken in England and the Association plans to ship at least 50,000 pounds to England in 1934. Officers of the Association believe the development of this outlet for their crop will have a decided stabilizing effect on domestic prices in the Province.

Considerable difficulty has been experienced by the Association in getting its shipments of package bees from the United States suitably routed by the railroads. For this reason some of the members have tried the rather unique experiment of trucking their own bees through

## PACKAGE BEES

FOR 1935

J. E. WING, Cottonwood, Cal.

**NOW BOOKING PACKAGE BEE ORDERS FOR 1935.** Every one of our colonies going into winter with a young queen and an abundance of honey, which means a lot of good bees for packages in the spring. Our prices will be as low as the lowest, the quality and service at least up to our all-time standard. Our 1934 transportation losses were negligible. Live bees are the ones that satisfy. We will deem it a privilege to quote. Jensen's Apiaries, Crawford & Macon, Miss.

## BEE SUPPLIES

We have a complete stock on hand at all times, so we can give you quick service.

A. H. RUSCH & SON CO.  
REEDSVILLE, WISCONSIN



**OLD FASHIONED  
Imported Italian  
BREEDING**

## QUEENS

ARE NOW BEING

Bred by

E. L. SECHRIST  
on the isolated island of Tahiti

The basic stock of these dark Italian bees was taken to Tahiti sixty-five years ago and has been bred pure ever since. The colonies are populous and need a two-story brood chamber. The workers are gentle, dark, uniformly banded with dull yellow and are good honey producers. The drones are distinctive, being black with no yellow except narrow bronzy bands, and can be distinguished from the drones of all other races.

Orders are being booked now at \$5.00 each for delivery whenever the purchaser desires. If anyone wants an unusually choice queen, he can pay \$10.00.

**E. L. Sechrist**

Box 191, PAPEETE,  
TAHITI, SOCIETY ISLANDS

## THRIFTY Package Bees & Queens

No change in 1935 prices. Let us reserve shipping dates for you early.

W. J. FOREHAND & SONS  
FT. DEPOSIT, ALA.

Since 1892

## Italian Queens

Write for our free book "About Bees" which is a brief treatise on Beekeeping.

**JAY SMITH**

ROUTE FIVE VINCENNES, IND.

**PACKAGE BEES**

At code prices. Let us save you money **for 1935** by furnishing good queens with the packages. ♀ ♀ ♀

**The CROWVILLE APIARIES**  
Winnsboro, Louisiana

**PIGEONS**

If you are interested in Pigeons, you need the **AMERICAN PIGEON JOURNAL**, an informational, instructive 36-page monthly magazine. Sample 15c; 12 months \$1; three years \$2.

**AMERICAN PIGEON JOURNAL**  
Dept. B Warrenton, Mo.

# Thanks!

**Customers and Friends**

We are very grateful to you for your continued patronage year after year. Satisfied customers are the foundation of our business and we spare neither time nor expense to give you better quality bees and service. We are thankful to our vast number of friends and customers, giving them much credit for the increased demand which made it necessary for us to expand rapidly in order to properly handle the larger volume of orders coming to us each year. We are proud of the fact that our bees as well as ourselves are becoming known far and wide. Many of our queens now are shipped to foreign countries. If you have never dealt with us, ask someone who has as it will pay you to give our bees and service a trial.



## Package Bees & Queens for 1935 Larger Output and Better Service

We never stopped and have enlarged our business to handle 25% to 50% more packages of bees and queens the coming season than last. We might add that we are very much encouraged with general prospects of a good season ahead and feel that all available bees will be taken. Very likely the demand for package bees will exceed the supply due to higher prices for honey and unfavorable conditions in some sections which have held increase down. We urge buyers to play safe, get in on the ground floor and help us to help you by placing your order now for delivery in the spring when wanted. Safe arrival and satisfaction guaranteed. We are booking orders now at 1934 spring prices and if any change is made the difference can be adjusted later.

We also carry a complete stock of **LEWIS BEEWARE AND DADANT'S FOUNDATION** and can furnish at catalog prices.

**YORK BEE COMPANY, JESUP, GA.**  
(The Home of Quality Products)

## MEET US IN VALDOSTA

**Wanted Amber Extracted Honey**

Send Samples and best price Frt. Paid to Cincinnati, O.

**THE FRED. W. MUTH CO.**

from the South. One member successfully hauled at least one auto truck load of 500 two and three-pound packages through from Alabama to Saskatchewan.

There are now about 10,000 colonies of bees in the Province. Most of these are wintered through and supplemented with package bees from the southern United States in the spring. However, nearly 3,000 colonies were killed outright in the fall of 1933 and replaced with package bees last spring.

Our beekeeping neighbors in Saskatchewan have had many problems to face in the past few years of drought and depression, but the spirited discussion of current problems heard at this meeting left no doubt in the mind of the writer about the future success of the Association.

The officers of the Association for the coming year are: Thomas Mack, of Lumsden, President (re-elected); Walter L. Dunavan, of Crichton, Vice-President (re-elected); and R. M. Pugh, of Regina, Secretary-Treasurer.

Prof. David Dunavan,  
Clemson College,  
South Carolina.

### Southern California Bee Men Meet At Santa Ana, December 4, 5, 6

The Southern California Bee Men will meet informally with the California State Beekeepers' Association in Santa Ana, California, at the Christian Church Educational Bldg., corner Sixth and Birch Streets, Tuesday, Wednesday and Thursday, December 4, 5 and 6.

The afternoon of the 6th will be devoted to the annual business meeting of the Southern California Bee Men.

An interesting and educational program has been arranged for the three-day meeting, and all interested beekeepers are cordially invited.

### Beekeepers Organize New Association At Marksville, Louisiana

The beekeepers who produce honey and shippage bees on combs met at Marksville, Louisiana, long the center of the industry for the state, and discussed their various problems.

Prices for package bees on and off combs, queen prices, and a scale of prices were agreed upon to advertise these products and submit to the U. S. code authorities for cooperation.

Officers elected for the new organization were: President, L. J. Gaspard, Hessmer, Louisiana; Vice-President and Assistant Secretary, Fred L. Ephardt, Luling, Louisiana; Secretary, Jes Dalton, Kenner, Louisiana. Practically all of the members are heavy honey producers. For some years it has been felt that the honey producers and those shippers specializing in packages on combs needed an organization that would give more careful consideration to their special

need and it was for this purpose that the meeting was held, with the organization of the "Comb Package Shipping and Honey Producers' Association."

It was decided to remain independent so as to keep nearer the interest of members rather than to affiliate with other organizations. It was also decided to cooperate in advertising package bees and intensify the advantage of this type of package for beginners and orchard purposes.

Long, slow, steady honeyflows with a mild climate make the section occupied by the members of this Association well adapted to the production of well built choice combs. Also a long course of progressive beekeeping has eliminated the black bees as a contamination of the American Italian bees. With a rigid inspection system, Louisiana is practically free from contagious diseases, assuring safety in that respect.

Jes Dalton, Secretary,  
Louisiana.

#### Illinois Meeting

The Illinois State Beekeepers' Association held its 44th Annual Convention at the St. Nicholas Hotel, Springfield, Illinois, on November 1 and 2. The meeting was called to order and presided over by President C. A. Mackelden.

The Convention was grieved to learn of the death of its former Secretary, Jas. A. Stone, of Springfield, who passed away a day or two previous to the meeting.

A full report of the inspection service and plans for future were given by Chief Apiary Inspector, A. L. Duax.

Mrs. Malitta Jensen, Secretary of the American Honey Institute, of Madison, Wisconsin, gave a wonderful talk on the activities and needs of the American Honey Institute. Her message showed how well the Institute was advertising honey for Illinois beekeepers as well as beekeepers in other states. The Illinois beekeepers pledged support to the Institute.

Mrs. Duax and Mrs. Bodenschatz reported on the excellent work done by the Illinois Advertising Committee.

Other talks were given by V. G. Milum, Roy A. Grout, W. S. Lohnes and W. W. Osborn.

The banquet on Friday evening was featured by a real honey menu as follows:

#### Cocktail

Honey Grapefruit - St. Nich. Special

#### Entrees

Queen Olives Celery Picalilli

St. Nicholas Choice Steak  
Mashed Potatoes

Honey Baked Sweet Potatoes  
Honey Buttered Green Peas  
Honey Raisin Bran Muffins  
(Please turn to page 559)

## Wanted White Extracted Honey

Send Sample and best price Frt. Paid to Cincinnati, O.

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**Transparent Honey  
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WRITE FOR SAMPLES AND PRICES

Crystal clear jars of strong simple construction in four sizes—Individual, Half Pound, One Pound and Two Pounds. And the new Bee

Hive jars, attractive for table use, with definite label space. In Half Pound, One Pound and Two Pound sizes. Gold or white screw caps.

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Packages & Queens  
Spring Delivery :: Code Prices

Very best of stock and service. . . . .  
. . . . . Costs nothing to book your order.  
**CANEY VALLEY APIARIES, Bay City, Texas**

#### THE BEEKEEPERS ITEM

The Southern beekeeper's own magazine, but read by honey-producers everywhere. Combined with the American Bee Journal makes a combination that covers the beekeeping field.

Send \$1.50 and get both magazines for a full year.

**BEEKEEPERS ITEM, San Antonio, Tex.**





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# WAX

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I also buy wax for cash. Write me how much wax you have and what you need, and I will make you a special offer this season.

WRITE FOR FREE CATALOG

**The WALTER T. KELLEY CO., PADUCAH, KENTUCKY**

## NATIONAL HONEY COOKERY CONTEST

Due to the publicity given this contest, thousands of homemakers will become sufficiently honey conscious to begin using honey. This contest is being sponsored by the Institute as a feature of its annual convention to be held at Valdosta, Georgia, December 17, 18, 19 and 20. Since it is being promoted in every state, it will serve to stimulate the market of all beekeepers.

**YOU** still have time to get your local homemakers to make entries. Make the most of the **DECEMBER** days left by contacting every woman you can in your neighborhood. You might even offer to pick up the entries and pack them all together for one shipment.

All entries must reach **Valdosta, Georgia**, by **MIDNIGHT** of **DECEMBER 14**, and should be addressed to

Mrs. Margaret Brand, County Home Demonstration Agent,  
Valdosta, Georgia.

Come to Valdosta and see the exhibit of entries. Enjoy at the same time the hospitality of our splendid friends, the members of the Southern States Beekeeping Federation. They have worked hard for months so that you might have a pleasant and profitable time at the conventions of American Honey Institute, American Honey Producers' League and their own Federation.

The Judges for the Contest will be:

Miss Lorene Collier, State Home Demonstration Agent, Georgia.  
Miss Mary I. Barber, Director of Home Economics, Kellogg's, Michigan.  
Mrs. M. F. Jensen, Honey Specialist, American Honey Institute.  
Prof. R. H. Kelty, President, American Honey Institute.  
Mr. J. W. Newton, President, American Honey Producers' League.  
Mr. W. E. Harrell, President, Southern States Beekeeping Federation.

As announced in the November issue, more than \$300 worth of prizes are offered.

Watch the bee journals for announcements of the winners.

And remember to make the most of the December days up to **MIDNIGHT**, December 14, when the contest closes.

For further information write

**AMERICAN HONEY INSTITUTE**  
**MADISON, WISCONSIN**

**Wanted Shipments of  
Old Combs for rendering  
into Wax.**

WRITE FOR FULL PARTICULARS  
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A Reliable Supply of  
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Send us the names and addresses of live wire beekeepers whom you believe should be reading the American Bee Journal. Include the number of colonies kept. Be sure they are not now readers.

For every subscription we get from your list we will extend your own subscription **THREE MONTHS**.

Mail your list of beekeepers to

**American Bee Journal**  
Hamilton, Illinois

## O. K. THREE-BANDED ITALIANS

We're here to give you just what you want in queens of O.K. stock for 1935. Our guarantee behind every one.

**P. M. WILLIAMS, Castleberry, Alabama.**

## PECANS

LARGE PAPER SHELL. WRITE  
FOR PRICES.

Young laying queens at code prices.  
**JASPER KNIGHT, Hayneville, Ala.**

# Crop and Market Report

Compiled by M. G. Dadant.

For our December Crop and Market page, we asked reporters to answer the following questions:

1. How is honey selling?
2. Any change in prices?
3. How did bees go into winter?
4. Late fall plant conditions?

## Honey Selling

Although there are quite a number of reports of honey selling satisfactorily, it is mostly in a jobbing way rather than retail, the retail sales seeming to have been held back by the warm weather. The best sales are reported in the northeast and eastern sections and in the far north with fair sales elsewhere except that the sales of honey in the western provinces of Canada are exceedingly good.

## Price Changes

In practically all instances, the jobbing and wholesale prices of honey are advanced over last year from 10 per cent to 25 per cent. In a great many instances, however, the beekeepers located in isolated communities have not followed this advance and have maintained last year's prices with the probability that they will be out of honey before the winter is over and unable to furnish at the same price to their customers owing to the higher cost of replacement of such honey. Very few reports to the effect that honey is any lower than last year with quite a considerable number of its being the same price and a large majority that the price is up from 10 to 25 per cent.

The western provinces of Canada again are reporting exceedingly good sales of honey and at an advance in price which nets the producer nearly ten cents per pound for his honey put up in 10-pound and 5-pound pails.

## Condition of Bees

In practically all instances throughout the entire country, bees have gone into the winter season in excellent shape as far as quantity of bees and young bees is concerned. There are, however, a great many sections in which the bees were short of stores as winter advanced and unless the beekeeper has been provident and taken care to feed, there is undoubtedly going to be a shortage of stores during the winter season. This is especially true since we have had a late, warm fall which induced bees probably to start breeding again and to consume large quantities of their winter stores.

Conditions again are best in the southeast and northeast, fairly good in the Central West and quite a large amount of feeding in the plains area and in California. Particularly is this true in the drouth stricken areas where rains did not come in sufficient time to yield a fall

flow and bees went into the winter with exceedingly small stores unless fed.

Reports coming from the extreme northern sections of this country as well as from the Canadian provinces would indicate that bees built strongly during the fall season and were cut off short by heavy frost with the hives still full of brood. This resulted in very light colonies when the brood was hatched. It is feared by some of the educators that there is going to be a heavy loss on the part of beekeepers who are not familiar with the circumstances.

## Honey Plants

Again in the northeast, southeast and in the eastern sections, we find conditions normal or above in honey plant conditions for the coming year.

In the central west and the plains area as well as in the southeast, the rains came too late to do the maximum of good. As we write this, rains are still in progress and it does look like conditions would partly be alleviated by the additional moisture. However, there is no doubt but that the white clover plants cannot come forward sufficiently this fall to warrant anything like a white clover crop next year. There is also doubt in the minds of the sweet clover area beekeepers as to whether sweet clover has not been seriously harmed in many instances by the drouth and will be unable to recover sufficiently to come out bountifully next spring.

In western Texas, Arizona and up through the mountain area are similar circumstances and it depends entirely upon the late fall and winter rains as to whether or not conditions can approach normal in 1935.

Western provinces of Canada and into Ontario have the same reports to make. Sweet clover damaged by the long drouth and the possibility that the young sweet clover will not come forward as it should even though the rains should be plentiful from now on.

## Summary

All in all, conditions are not as satisfactory as to honey plants as they were a year ago. The condition of the bees may be about normal or perhaps a little above where proper feeding has been done.

There is undoubtedly a short honey crop this year. Although the amount of exports is negligible, this is being more than taken care of by the additional domestic demand and the result is undoubtedly that here will be a shortage of honey by the time spring advances if we have anything like a normally cold winter and steadily growing employment.

	Car Lot White	Car Lot Amber	Ton Lots	1-60	10-lb. to Grocer	10-lb. Retail	5-lb. to Grocer	5-lb. Retail	16-oz. to Grocer	16-oz. Retail	8-oz. to Grocer	8-oz. Retail	Comb Section	Comb Case
Northeast	\$.07 1/2	\$.07	\$.08	\$.09	\$1.20	\$1.50	\$.55	\$.75	\$.18	\$.25	\$.11	\$.15	\$.25	\$4.50
Southeast	.07	.06 1/2	.08	.09	.90	1.20	.50	.65	.15 1/2	.20	.10	.14	.15	3.00
South	--	--	.08 1/2	.09	.90	1.20	.45	.60	.15 1/2	.20	.10	.14	.15	3.00
Texas	.06	.06	.06 1/2	.08	.85	1.10	.45	.55	.15	.20	.10	.14	.15	3.00
Southwest	.05 1/2	.05 1/4	.06	.07	.75	.90	.40	.50	--	--	--	--	.15	3.00
N. Central	.07	.06 1/2	.07 1/2	.08 1/2	.95	1.20	.50	.65	.15 1/2	.20	.10	.15	.20	4.00
Plains	.07	.06 1/2	.07 1/2	.08	.95	1.20	.50	.65	.15 1/2	.20	.10	.15	.20	4.00
In-Mount.	.06 1/2	.06	.07	.07 1/2	.70	.90	.38	.50	.14	.20	.09	.13	.15	3.25
Northwest	.06	.06	.07	.08	.70	.90	.40	.55	.14	.20	.09	.13	.15	3.25
California	.06 1/2	.05 1/2	.07	.08	.90	1.10	.47	.60	.14	.20	.09	.13	.15	3.25

**BULK COMB**—10% above extracted prices.

**AMBER**—5% to 10% below white prices.

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References: 1st National Bank, R. G. Dun or Bradstreet's Commercial Reports.

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Copy for this department must reach us not later than the fifteenth of each month preceding date of issue. If intended for classified department it should be so stated when advertisement is sent.

Rates of advertising in this classified department are seven cents per word, including name and address. Minimum ad, ten words.

As a measure of precaution to our readers, we require references of all new advertisers. To save time, please send the name of your bank and other references with your copy.

Advertisers offering used equipment or bees on combs must guarantee them free from disease, or state exact condition, or furnish certificate of inspection from authorized inspector. Conditions should be stated to insure that buyer is fully informed.

## **BEEES AND QUEENS**

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Allen Latham, Norwichtown, Conn.

**MOUNTAIN GRAY CAUCASIAN Bees and Queens.** Get in touch with us for your 1935 needs. Bolling Bee Co., Bolling, Ala.

**PACKAGE BEES and queens for 1935.** Lowest code prices. Book your order early and be assured of prompt shipment.

J. M. Cutts & Sons, R. 1, Montgomery, Ala.

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**CHOICE Michigan Clover Honey.** New 60's.

David Running, Filion, Michigan.

**HONEY FOR SALE—Keep your customers supplied with honey.** We can furnish white and light amber honey at attractive prices. Packed in 60-lb., 10-lb. or 5-lb. tins.

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**FOR SALE—Northern white extracted and comb honey.** M. W. Cousineau, Moorhead, Minn.

**HONEY FOR SALE—Any kind, any quantity.** The John G. Paton Company, 230 Park Avenue, New York.

**FOR SALE—Well ripened clover honey, carlot or local shipments.** Will be pleased to submit sample. Also new crop section comb honey, in carrier crates of four or eight cases. The Colorado Honey Producers' Association, Denver, Colorado.

**WHITE clover extracted honey.** Write for prices and sample.

Kalona Honey Co., Kalona, Iowa.

**CHOICE WHITE CLOVER HONEY** in 60-lb. cans. J. F. Moore, Tiffin, Ohio.

**BLACK HILLS—White extracted honey** in 60-lb. cans. Sample 25c.

Ernest W. Fox, Fruitdale, S. Dakota.

**600 CASES clover basswood comb honey.** Chas. Guhl, R. 7, Napoleon, Ohio.

**EXTRACTED WHITE CLOVER HONEY** in 5-lb. pails and 60-lb. cans. 1-lb. sample 20c. Also comb honey.

F. W. Summerfield, Grand Rapids, Ohio.

**SEND FOR HONEY PRICES; discount for quantity orders.**

H. G. Quirin, Bellevue, Ohio.

**BUCKWHEAT HONEY** in 5, 10 and 60-lb. tins. Henry Stewart, Prophetstown, Ill.

**HOWDY'S HONEY—White, clover extracted** in new sixties, carlot or less. Also some amber. Howard Potter, Ithaca, Michigan. (Personal, 1200 Mass. Avenue, Cambridge, Mass.)

**FINE QUALITY extracted honey, basswood and sweet clover blend.** Write for prices.

Henry Price, Elizabeth, Ill.

**CLOVER COMB, also extracted** in 60-lb. cans. C. Holm, Genoa, Ill.

**WHITE CLOVER - BASSWOOD** extracted honey, 7½ cents by case, 7 cents ten cases or more. Amber 6½ or 6 cents ten cases. A. J. Wilson, Hammond, N. Y.

**WHITE CLOVER and amber comb honey** in all grades. F. J. Smith, Castalia, Ohio.

**NEW CROP clover and amber honey,** new fives and sixties.

D. H. Morris, Swanton, Ohio.

**FOR SALE—White Comb Honey,** all grades. Liberal discount in quantity lots.

N. B. Querin & Son, Bellevue, Ohio.

**EXTRA WHITE clover-basswood honey** in new 60 lb. cans, 7¼ cents per lb.; 4 cans or over, 7 cents.

A. A. French & Son, Theresa, N. Y.

## **HONEY AND BEESWAX WANTED**

**WANTED—Car lots honey; also beeswax,** any quantity. Mail samples, state quantity and price. Bryant & Cookinham, Inc., Los Angeles, Calif.

**WANTED—HONEY and BEESWAX.** Beekeepers will find it to their advantage to communicate with us. Please send samples, state quantity available and prices. CALIFORNIA HONEY COMPANY, Hamilton & Company, Agents, 108 W. Sixth Street, Los Angeles, California.

**WANTED—Carlots or less of white clover extracted honey.** Mail price and sample to Clover Blossom Honey Co., Columbus, O.

**CASH FOR DARK GRADES OF HONEY.**

C. Jankowski, Gurnee, Illinois.

**WANTED—Extracted Honey.** Send sample and price delivered to T. W. Burleson & Son, Waxahachie, Texas.

**WANTED—White extracted honey.**

Hyde Bros., New Canton, Ill.

**WANTED—No. 1, White Clover Extracted Honey** in 500-pound lots or more.

Adolph Seymour, Markesan, Wisconsin.

## **FOR SALE**

**FOR SALE—Eleven hundred colonies of bees** with a very fine brick warehouse, partly fireproof. A full equipment. For more information write Post Office Box 173, Idaho Falls, Idaho.

## **WANTED**

**BEES—100 to 1000 colonies in good location** in north or northeastern United States.

Hansen & Sernon, Sierra Madre, Calif.

## **SUPPLIES**

**BEST QUALITY bee supplies, attractive prices, prompt shipment.** Illustrated catalog on request. We take beeswax in trade for bee supplies. The Colorado Honey Producers' Association, Denver, Colo.

**PORTER BEE ESCAPES** save honey, money, avoid stings; faster most efficient. Sample 15c. R. & E. C. Porter, Lewistown, Ill.

**DIFFERENT, that's all.** Written and published for the instruction of beekeepers. 52 pages of breezy entertaining beekeeping comment each month. One year, \$1.00; two years, \$1.50. Sample, 3c stamp.

The Beekeepers Item, San Antonio, Texas.

**FRAMES—Standard Hoffman,** \$3.75 per 100. Price list free.

Northern Bee & Honey Co., Osceola, Wis.

**THE PINARD Nailless Queen Bee Shipping Cage.** Send for Sample. Agents—Diamond Match Co., Chico, Calif.; Roy S. Weaver & Bro., Navasota, Texas. A. B. Pinard, Mfg., 810 Auzerals, San Jose, Calif.

**SAVE queens.** Saffin cages now 15c. Ten for \$1.00. Allen Latham, Norwichtown, Connecticut.

**WILL WORK YOUR WAX** into medium brood foundation for 15 cents per pound.

Fred Peterson, Alden, Iowa.

## **MISCELLANEOUS**

**SCIENTIFICALLY gauge resistance; cull inferior combs, bees, produce wax, compartmentize hives with new queen fences.**

Chas. Hotopp, Racine, Minnesota.

**GREAT OPPORTUNITY, buy profitable** apiary business in Canada at very low price. Address Box S.K., American Bee Journal.

**PLANS FOR POULTRY HOUSES — All styles; 150 illustrations.** Tells you the type to build for your particular locality. Secret of getting winter eggs, and copy of "Inland." Send 25c. Inland Poultry Journal, Spencer, Indiana.

**BOOK BARGAIN—Very slightly damaged** copies of Beekeeping in the South by Kenneth Hawkins, cloth bound, published to sell at \$1.25, price postpaid only 29 cents.

American Bee Journal, Hamilton, Ill.

**THE BEE WORLD—The leading bee journal** in Great Britain and the only international bee review in existence. Specializes in the worlds news in both science and practice of apiculture. Specimen copy, post free, 12 cents stamps. Membership of the Club, including subscription to the paper, 10/6. The Apis Club, Brockhill, London Road, Camberley, Surrey, England.

## **A Book For Flower Lovers**

"All About Flowering Bulbs" is the title of a book by T. A. Weston which will be much appreciated by busy folks who love flowers and wish to make the most of limited space. The author brings in now and then a bit of homely experience which shows how clearly he understands the problems of those of us who can never afford all the bulbs we wish to buy nor take all the time we would wish to spend with our gardens.

The book is generously extended to include plants which are not bulbs in the strict sense of the term but which are treated in a similar manner such as peonies, iris, etc. There is a rich fund of information about time of planting, kind of soil required, preference as to sun or shade and numerous other things which rise up to trouble the gardener when he buys some new plant with which he is not already familiar.

A great variety of flowering plants from the early spring crocus and daffodils to the dahlias of late summer is included. Beside the hardy bulbs for northern gardens liberal space is given to the tender things which must be taken up in the fall and those which can be flowered indoors in pots.

There are many very fine illustrations, some of them in color, making altogether a very helpful little volume of 184 pages which sells for two dollars. The book is published by the A. T. DeLaMare Company of New York who specialize in garden books.



(Continued from page 555)

Dessert  
Honey Pumpkin Pie with Whipped  
Cream  
Coffee

The St. Nicholas Hotel is to be congratulated on the manner in which this menu was prepared and served. Too often menus of this kind are overdone but this one was as near perfect as could be asked.

The Director of Agriculture, Walter W. McLaughlin and Mrs. McLaughlin, also the Assistant Director, J. H. Lloyd and Mrs. Lloyd were present at the banquet.

General discussions of current topics were covered by the meeting including the use of carbolic acid as a repellent for bees and as a method of taking off honey.

Election of officers resulted in the following: President, V. G. Milum, Urbana; Treasurer, W. W. Osborn, Hillsboro; Secretary, Edw. F. Peterson, Kewanee; 1st Vice President, W. S. Lohnes, Pekin; 2nd Vice President, Adam Bodenschatz, Lemont; 3rd Vice President, H. W. Jones, Cary; 4th Vice President, A. G. Gill, Chicago; 5th Vice President, Robt. Gober, Oregon.

## Another Hospital Case

Arthur Griffith, of Macomb, Illinois, spent a night in Phelps Hospital as the result of a bee sting which he suffered while cutting weeds along the state highway north of Macomb. He was unconscious for half an hour after the bee had stung him. He was brought to the hospital and was unable to return until the next day. This is another case of oversensitiveness to the poison of the bee sting.

Chas. W. Kетtron,  
Illinois.

## Bees Misbehave in Orchard

Stories have often been told of the way bulls and bears control the stock market but this tells of bees controlling an apple orchard in the Growmore district a few miles from Yakima. Apple boxes were piled high in the E. A. Jensen orchard, preparatory to harvest. After picking began, the orchard workers discovered that bees had swarmed in three of the boxes.

The pickers worked all around the orchard, avoiding the tree under which the three boxes stood. This pile of boxes was never touched, the pickers preferring to travel some distance to the warehouse rather than disturb the bees.

Finally one bold workman chose a cool morning and placed these boxes of bees on the ground so that the remaining ones might be used. The bees are still holding the fort.

I. L. Neill,  
Washington.

# Books You Can Use

**THE HONEYBEE** by Langstroth and Dadant. A complete text on beekeeping. 450 pages, 200 engravings. Langstroth's work forms the basis for our present beekeeping methods. Successful beekeepers use the Honeybee to aid in their daily problems. Available in English, French, Spanish, Italian, Polish, Russian editions. Postpaid \$2.00.

**AMERICAN HONEY PLANTS** by Frank C. Pellett. A full knowledge is necessary of nectar bearing plants to be able to judge locations, etc. Most authoritative book published on this subject. Well illustrated. Revised. Postpaid \$3.00.

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**HUBER'S OBSERVATIONS ON BEES** translated from the French by C. P. Dadant. Actual observations on bee life in every day language. The egg cycle, comb building. 200 pages. Beautifully bound. A fine book. Postpaid \$3.00.

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**ANATOMY AND PHYSIOLOGY OF THE HONEYBEE** by Snodgrass. Just what its name implies. Best authority on bee anatomy ever published. Many plates, cloth \$3.50 postpaid.

**OUR BACKDOOR NEIGHBORS** by Pellett. A series of stories of actual experiences with wild birds and animals as told by the author. Cloth. Postpaid \$1.50.

**BEEKEEPING** by E. F. Phillips. Textbook form. Author was formerly chief of Bee Culture Laboratory in Washington. Authoritative book. Postpaid \$4.00.

**BEE HUNTING** by Lockhart. Shows how to make apparatus for finding bee trees in the woods. Paper. Price 35 cents.

**BEE PEOPLE** by Margaret Morley. Delightful description of the beehive and its people. Cloth. Postpaid \$1.50.

**BEES AND BEEKEEPING** by Cheshire. (2 volumes.) Anatomy and practice. An old book but interesting. Postpaid \$6.00.

**BEGINNERS BEE BOOK** by Pellett. A good beginning book on the subject. Short, concise. Postpaid \$1.50.

**BIRDS OF THE WILD** by Pellett. A delightful series of stories on our feathery friends, well told. Postpaid \$1.75.

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## The POSTSCRIPT

GOSSIP ABOUT THE OFFICE IN THE MAKING OF THE MAGAZINE

Some of the earliest writings were made on wooden tablets coated with beeswax. Records were inscribed on these wax surfaces with a metal style. Paper did not come into use until about the thirteenth century. If present day books and papers were to be replaced by wax tablets, beeswax would be a precious article. There would be far less rubbish recorded, however.

When wax candles were first used by the church they had no wicks and were not intended to be burned. Instead the column of wax provided a ready place in which to record all the movable feasts of the year. Thus the bee and its products have been closely associated with the affairs of men throughout the rise of civilization.

Probably one of the earliest forms of artificial light was provided by dipping the pith of a rush in melted beeswax. The pith served the purpose of a wick which burned readily once it was lighted. Centuries before matches were invented it must have been no easy matter to light this primitive candle.

Referring again to the water maple mentioned in last month's Postscript, A. G. Woodman, of Michigan, writes: "S. D. Chapman, of Mancelona, often spoke of it as an early source of honey, often darkening the early white honey. It is amber, something like the fruit bloom, dandelion, etc. Northern Michigan is about the only location where we hear much about it." Apparently it must be equally valuable in many eastern Canadian locations.

J. E. Patton, of LaMoille, Nevada, tells us that heavy frost late in June cut down the crop in that section. This was followed by drought and grasshoppers with the region still very dry when his letter was written in October. The year 1934 sure gave the beekeepers plenty of obstacles to overcome. It ought to be time for a good season next year.

J. A. McClintock, Associate Professor of Horticulture at Purdue University, Indiana, writes that he has always held to the opinion that bees were unintentional carriers of the blight bacterium. He holds that if men would spend as much time in cleaning up hold-over cankers as in condemning the bees there would be less blight in the orchards. Most present day authorities now appear to agree with Prof. McClintock that the honeybee is **not** the primary cause of the distribution of fireblight. McClintock is the author of a leaflet issued by the Tennessee Experiment Station on "Canker Treatment for Fire-Blight Control."

From a very interesting letter from H. B. Parks, of the Texas Apicultural Laboratory, I quote the following regarding the change that has come to Texas beekeeping: "All the old natural ranges are gone. The plow and the goats have almost eliminated huajillo. Much of the other brush has gone the same way and we have no cultivated crops common to south Texas which are honey producing."

Great changes have come to the bee pastures of much of America in recent years. More and more the commercial honey production is being concentrated in the sweet clover regions. Whereas thirty years ago many carloads of huajillo honey were shipped from the Uvalde district in Texas and no honey went out of the Dakotas, we now find the large shipments from the Northern Plains region. However, these changes make one wonder whether there is such a thing as a permanent beekeeping location. Even the sweet clover districts of the North have seen quite a shift in recent months when numerous beekeepers have moved to new locations.

Upton Sinclair used the bee as the symbol of his E P I C plan in California, showing the insect with outstretched wings and extended sting, with the words "I produce—I defend."

W. J. Sheppard, former Provincial Apiarist of British Columbia whose retirement from public service was mentioned on this page in the June, 1931, issue, still retains his interest in bees. He has sent me a middle entrance with which he has spent much time experimenting. Since arrival was delayed I presume that it is held up somewhere in the customs service between the two countries. These trade barriers erected between all countries in this short-sighted age are very inconvenient to friendly intercourse between nations.

Sheppard writes that there can be no question but that the bees come through the winter better in hives with a middle entrance than with a bottom one. The articles on top and middle entrances which have appeared in this magazine from time to time have aroused a great deal of interest among our readers. The worst objection seems to be the inconvenience of manipulating a hive with the entrance raised above the bottom board. Sheppard explains that his latest attempt overcomes some of that trouble since it is attached to the sides of the bottom story by metal strips and the frames of the lower body can be lifted without moving it.

From the opposite side of the continent, F. M. Baldwin, of Darien, Georgia, sends interesting notes about the pinkvine. His letter dated October 30 stated that it had yielded nectar steadily since July, that it carried thousands of blooms and that bees were on them from dawn to dark unless it was raining heavily.

Pinkvine is a native of Mexico which is generally planted for ornament in the Southeast where it is also known as Coral-vine and Rosa de Montana. Frank Stirling once told me that it is more valuable to plant for honey alone than any other plant suited to Florida. Bee men in mild climates may well give more attention to this vine. Baldwin promises to tell us more about it.

Maurice N. Shutts, of Merrill, New York, closes a letter with the remark that the bees are ready for the cellar, some snow is on the ground and deer hunting is the order of the day. One nice thing about beekeeping is that there is plenty of time for recreation along with the season's work.

L. J. Mannex, of New Zealand, tells us of getting fireweed plants from British Columbia a few years ago and that they are doing well for him in that far country. This is interesting and a bit surprising since fireweed has not often been transplanted with so much success in this country.

Dr. A. S. Colby, of Illinois University at Urbana, is interested in the improvement of the native persimmon. It is important that he find the best wild trees so as to secure stock with unusual quality, large size and few seeds from which to propagate. The cultivation of the persimmon would be of interest to beekeepers since this tree is especially good as a source of nectar. Perhaps persimmon orchards may yet find a place on American farms.

C. L. Farrar questions my statement that the reserve supply of pollen is likely to be removed with the supers. He observes that it is stored close to the active brood nest. What I had in mind is the practice of men who use two stories for brood rearing and then reduce the bees to one story for wintering. When the upper story of the summer brood nest is removed, the stored pollen quite naturally comes with it.

FRANK C. PELLETT.

